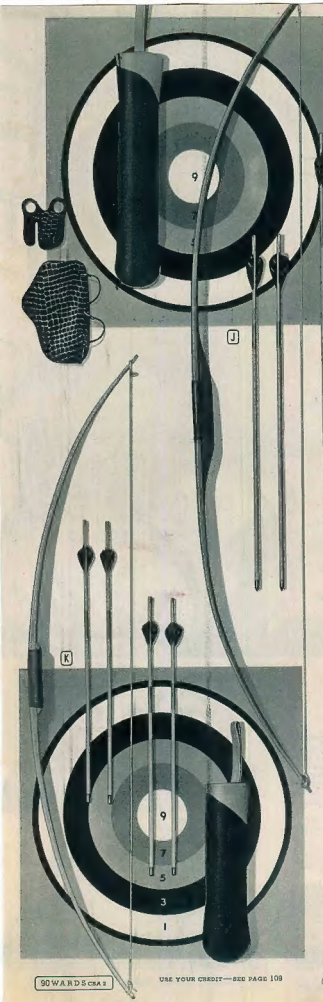


Cowboy suits

SHOWN ON OPPOSITE PAGE

A NORTHWEST MOUNTIE. Red coat is cotton flannel—4 pockets, metal buttons, "gold" braid. Cotton drill Pants have "gold" stripe. Leather Sam Browne belt and holster; dummy pistol. Duvetyn hat. Cotton duck leggings. Mountie whistle.
48 T 742—EVEN SIZES: 4, 6, 8, 10, 12 YRS. *State size.* Ship. wt. 3 lbs. $3.79

B RODEO RIDER'S OUTFIT—FUR TRIMMED. Real cowboy Chap Pants of thick, shaggy fur have big side sweeps, gay cutouts, metal studs. Made with strong cotton duck top and back, elastic in waistband. Matching fur-trimmed Vest has suede-cloth top, cotton covert back. Cotton flannel Shirt in assorted plaids. "10-gallon" hat of blocked felt. Split leather "jeweled" holster and belt with wood-plastic dummy pistol. Sateen Bandana with stenciled slide. Real white rope lariat.
48 T 732—EVEN SIZES: 4, 6, 8, 10, 12 YRS. *State size.* Ship. wt. 5 lbs. $6.59

C COWBOY VEST—REAL SUEDE LEATHER. Made of selected heavy, soft, fawn-colored suede leather, brown leather trim. Cut to match Chap Pants (B).
48 T 726—EVEN SIZES: 4, 6, 8, 10, 12 YRS. *State size.* Ship. wt. 1 lb. 8 oz. $3.25

D COWBOY SHIRT. Boys' Brown cotton flannel Rodeo Shirt. Tan trim, tie cord at neck. Western Style. Breast pocket has steerhead motif.
48 T 771—EVEN SIZES: 4, 6, 8, 10, 12 YRS. *State size.* Ship. wt. 9 oz. 95c

E COWBOY CHAPS—REAL SUEDE LEATHER. Selected quality soft, pliant fawn colored suede leather with brown leather binding and trim, metal studs. For a handsome, sturdy play outfit order these chaps, also shirt and leather vest above.
48 T 786—EVEN SIZES: 4, 6, 8, 10, 12 YRS. *State size.* Ship. wt. 2 lbs. 12 oz. $4.95

F WILD BILL HICKOK. "Leopard" cloth trims this sturdy cotton covert cloth outfit. Chap pants have suede cloth side sweeps. Vest has plaid cotton flannel sleeves. Holster belt carries dummy pistol. Bandana with slide. White rope lariat.
48 T 738—EVEN SIZES: 4, 6, 8, 10, 12 YRS. *State size.* Ship. wt. 1 lb. 14 oz. $2.10

G THE JESSE JAMES. Bright red twill topping Vest and Chap Pants of brown cotton drill give this outfit real zip. Gay cutouts, the duvetyn hat, and cotton flannel shirt in assorted patterns have real Western air. Gay bandana. Dummy pistol in suede cloth holster and sure enough white rope lariat.
48 T 730—EVEN SIZES: 4, 6, 8, 10, 12 YRS. *State size.* Ship. wt. 2 lbs. 2 oz. $2.79

H ROUGH RIDIN' OUTFIT. Chap Pants and Vest of strong black cotton whipcord topped with red mohair or twill are trimmed with suedine bands, metal studs. Flannel Shirt in bright assorted patterns. Dummy pistol in split cowhide holster. Suedine belt has metal studs, dummy bullets. Colorful bandana with steerhead slide. Black Duvetyn hat. White rope lariat included.
48 T 731—EVEN SIZES: 4, 6, 8, 10, 12 YRS. *State size.* Ship. wt. 3 lbs. 2 oz. $3.89

READ "HOW TO MEASURE" ON PAGE 93 BEFORE ORDERING COWBOY SUITS.

ARCHERY, PISTOL-HOLSTER SETS

SHOWN ON THIS PAGE

J TEEN-AGE ARCHERY SET. Suitable for youngsters up to 14 years and a sound set with which to start an interesting hobby. 4½-foot hardwood bow with leather grip. Four 22-inch feathered birchwood arrows tipped with plastic and well balanced for speed. Leather finger and arm-guard. Quiver of strong cotton fabric. Official type 18-in. paper target and instruction book included. Made by manufacturer of professional archery equipment.
48 X 818M—9-Piece Teen-Age Archery Set. Shipping weight 3 lbs. $2.95

K JUNIOR ARCHERY SET. Just the right size and "pull" for 7 to 10-year olds. Hickory bow with cloth grip, sized for younger archers—about 44 in. long. Four 18-in. feathered wood arrows with painted tips and small cloth quiver. Official type 18-in. paper target. Beginners' Instruction Book.
48 T 819M—7-Piece Junior Archery Set. Shipping weight 2 lbs. 4 oz. $1.95

PISTOLS IN SETS (L) and (M) are molded from a wood flour "mix"; They are NOT nearly as strong as metal, and the finish is inferior. They have the general shape of pistols and are the best imitation we have been able to find.

L COWBOY PISTOL AND HOLSTER SET. 11½-in. painted dummy Pistol described above. In split cowhide holster decorated with Wild West design. 3 dummy bullets. Split cowhide belt, 1 in. wide, also carries Western design.
48 T 842—Large Holster Set. Shipping weight 1 lb. $1.15

M "LITTLE BUCKEROO" PISTOL AND HOLSTER SET. For littlest cowboy's first gun. 7½-in. dummy pistol described above, with black painted barrel, white handle. In split cowhide holster. 9½-in. sheath decorated with 3 dummy bullets.
48 T 840—Small Holster Set. Shipping weight 9 oz. 55c

USE YOUR CREDIT—SEE PAGE 108

A
B
Vest C
Shirt D
Chaps E
E
G
H

The Greatest Sales Creating Tool Merchandising Help Ever Offered To Hardware Dealers

WORTH
REG. U. S. PAT. OFF.
PLAN

TOOL ISLAND

a "TREASURE ISLAND" in the sea of hardware

The result of 14 months study of today's most SUCCESSFUL tool merchandising methods

Combining every advanced feature of modern display design to help you SELL MORE TOOLS

Enabling you to offer the REAL TOOL VALUES that the public IS buying . . .

the right tools . . . . correctly priced and DISPLAYED to SELL . . PROFITABLY

Important

Fits your **standard** 7 ft. table. Base offset to protect edges. **Over 28 square feet** of flat display area plus bit brace rack. All necessary clips for tools provided, in **proper location. Space feature** inside frame allows easy access to stock.

Height above table to top display shelf, 18" (bit brace rack 12¼" additional.) Net weight 105 lbs. Shipping weight 144 lbs.

Trade Mark **Tool Island** Reg. U. S. Pat. Off. Patent applied for on design and construction of **Tool Island**

FORM YCA-M-CM

Printed in U.S.A.

WORTH TOOL ISLAND

One of the Greatest Profit making helps the **Independent Hardware Merchant** ever found. These **Worth Tools** are all **guaranteed.**

This Assortment carries only popular Tools and each piece is Tagged at Competitive Retail Prices. **American Made for the Mechanic or Householder.**

Information and Price on **Tool Island Merchandiser** and **Tools** Gladly Furnished upon request. Display will not be sold without Worth Tools.

Tool Island Weight Less Tools, 144 lbs.

Cat. No.	Description	Size	Retail Price Each	Contents No. 11 Deal	Contents Sample Deal	Open Stock Per Carton
A 1	Polished Brace	10 "	$1.39	4	2	4
A 5	N.P. Brace	10 "	1.89	2	1	2
A 6	N.P. Brace	10 "	2.75	1	1	2
A 7	Hvy, Shell Brace	10 "	4.19	1	1	2
A 8	Hvy Shell Brace	12 "	4.49	1	1	2
A 3	B. B. Chuck	10 "	5.25	1	1	2
B 1	Exp. Bits	3/8 to 3"	1.49	2	2	1
B 2	Exp. Bits	1/2 to 1 1/2"	1.29	1	1	1
B 5	Screw Driver Bits	1/4"	.21	2	2	6
B 6	Screw Driver Bits	3/8"	.23	2	2	6
C 1	Draw Knives	8 "	1.59	2	2	3
C 2	Draw Knives	10 "	1.89	1	1	2
D 1	Pocket Snips	7 "	.69	2	2	6
D 2	Household Snips	12 1/2"	.99	4	4	6
D 3	Tinners Snips	12 3/4"	2.39	1	1	2
D 4	Tinners Snips	11 1/2"	1.99	1	1	2
D 5	Household Snips	10 "	.79	2	2	6
D 7	Household Snips	12 1/2"	1.39	2	1	2
E 1	Slip Joint Pliers	6 "	.49	6	4	1
E 2	Slip Joint Pliers	8 "	.59	4	2	1
E 3	Slip Joint Pliers	10 "	.79	2	2	1
E 4	Thin Nose Pliers	6 1/2"	.55	4	3	1
E 5	Bent Nose Pliers	6 1/2"	.69	2	2	1
E 6	Side Cutting Pliers	5 1/2"	.99	2	1	1
E66	Side Cutting Pliers	7 "	1.29	2	1	1
E 7	Diagonal Pliers	5 "	1.29	2	1	1
E77	Diagonal Pliers	6 "	1.79	2	1	1
E 8	Electrician Pliers	8 "	1.89	2	1	1
E88	Electrician Pliers	7 "	1.69	2	1	1
E 9	Chain Nose Pliers	5 1/2"	1.29	2	1	1
E10	Button Pliers	10 "	1.49	2	1	1
E11	Button Pliers	8 "	1.19	2	1	1
E18	Slip Joint Pliers	6 "	.25	6	3	6
E17	Slip Joint Pliers	7 "	.35	4	2	6
E16	Slip Joint Pliers	10 "	.49	4	2	6
E19	Side Cutting Pliers	6 "	1.15	2	1	1
E20	Side Cutting Pliers	8 "	1.69	2	1	1
F 1	Adj. Wrench	6 "	.69	3	2	1
F 2	Adj. Wrench	8 "	.89	3	2	1
F 3	Adj. Wrench	10 "	1.09	2	1	1
F 4	Adj. Wrench	12 "	1.59	1	1	1
G 1	Monkey Wrench	8 "	1.19	1	1	4
G 2	Monkey Wrench	10 "	1.49	1	1	4
H 1	Socket Fir. Chisel	1/2"	.89	4	3	6
H 2	Socket Fir. Chisel	3/4"	.99	3	3	6
H 3	Socket Fir. Chisel	1 "	1.19	3	3	6
H44	Butt Chisel	1/4"	.69	1	1	6
H45	Butt Chisel	3/8"	.75	2	1	6
H 4	Butt Chisel	1/2"	.89	2	1	6
H 5	Butt Chisel	3/4"	.95	2	1	6
H 6	Butt Chisel	1 "	1.09	2	1	6
H 7	Butt Chisel	1 1/4"	1.19	2	1	6
J 1	Cold Chisel	1/2"	.25	6	4	6
J 2	Cold Chisel	5/8"	.35	6	4	6
J 3	Cold Chisel	3/4"	.39	4	3	6
K 1	Pinchers	8 "	.89	2	2	4
L 1	Screw Driver	4 "	.45	4	2	6
L 2	Screw Driver	6 "	.55	3	2	6
L 3	Screw Driver	8 "	.65	2	1	3
L14	Screw Driver	3 "	.15	4	2	6
L15	Screw Driver	4 "	$ .20	4	2	6
L16	Screw Driver	6 "	.25	3	1	6
M 1	Polished Hammer	16 oz.	.59	4	4	6
M 2	Polished Hammer	16 oz.	.89	3	2	6
M 3	Polished Oct. Hammer	16 oz.	1.25	2	2	4
M 4	Polished Hammer	16 oz.	1.49	1	1	4
M 5	Ripping Hammer	16 oz.	.99	3	2	4
M 6	Eng. Hammer	42 oz.	1.69	2	1	4
M 7	Mach. Hammer	1 lb.	.99	2	1	4
M87	Mach. Hammer	1 1/4 b.	1.09	1	1	4
M 8	Mach. Hammer	1 1/2 lb.	1.19	1	1	4
M 9	Mach. Hammer	1 3/4 lb.	1.29	1	1	4
M14	Ladies Hammer	7 oz.	.69	2	1	6
N 1	Coppers, Handled	1 1/2 lb.	.65	2	2	Bulk
N 2	Coppers, Handled	2 lb.	.75	2	2	Bulk
N 3	Coppers, Handled	3 lb.	.95	1	1	Bulk
P 1	Wing Dividers	8 "	.99	2	1	6
P10	Wing Dividers	6 "	.89	1	1	6
R10	Pipe Wrenches	8 "	.69	2	2	6
R 1	Pipe Wrenches	10 "	.95	4	2	6
R 2	Pipe Wrenches	14 "	1.25	3	2	6
R 3	Pipe Wrenches	18 "	1.79	2	1	4
R 4	Pipe Wrenches	24 "	3.09	1	1	4
S 1	Steel Square	24x12"	.79	2	2	3
S 2	Steel Square	24x16"	1.39	1	1	3
S 3	Try Square	7 1/2"	.75	3	1	3
S 4	Combination Square	12 "	1.35	1	1	1
T 1	Clamp	3 "	.15	12	6	12
U 2	Wrecking Bar	24 "	.59	3	3	Bulk
V 1	Block Plane	7x1 3/4"	.69	2	2	1
V 2	Smooth Plane	8x1 3/4"	1.79	1	1	1
V 3	Smooth Plane	9x2 "	1.99	1	1	1
V 4	Jack Plane	14x2 "	2.19	1	1	1
W 1	Half Hatchet	3 1/4"	1.39	2	2	4
X 2	Hand Drill	12 "	1.69	2	2	1
Y 1	Single Bit Axe	3 1/2 lbs.	1.99	2	2	4
Y 2	Double Bit Axe	3 1/2 lbs.	2.49	1	1	4
Y 3	Household Axe	2 1/4 lbs.	1.69	1	1	4
Z 2	Slim Taper Files	6 "	.19	4	4	6
Z 3	Ex. Slim Taper Files	6 "	.19	4	4	6
Z 4	Mill B Files	6 "	.19	1	1	4
Z 5	Mill B Files	8 "	.25	2	2	4
Z 6	Mill B Files	10 "	.29	1	1	4
AA11	Vise Clamp Base	2 1/2"	1.99	1	1	1
AA12	Vise Swivel Base	3 1/2"	2.99	2	1	1
BB11	Grinder	4 "	2.89	1	1	1
CC11	Hand Saw	26 "	1.99	2	2	4
DD11	Center Punch	3/8x5"	.29	3	2	6
DD44	Drift Punch	1/4x3"	.29	3	2	6
DD88	Solid Punch	1/4x6"	.35	3	2	6
6F03	Wrench Set (6)	1/4 to 3/4"	1.19	3	2	Bulk
5F04	Wrench Set (5)	1/4 to 3/4"	1.39	2	1	Bulk
HH 1	Scratch Awl	3 1/2"	.35	2	2	6

TOTAL RETAIL VALUE No. 11 DEAL **$320.06** *$246.21*

290 Pieces, Weight 325 Lbs.—(Less Tool Island)

TOTAL RETAIL VALUE SAMPLE DEAL $245.34 *$185.86*

206 Pieces, Weight 260 Lbs.—(Less Tool Island)

WORTH

TOOL ISLAND

An Attractive Presentation of Tools to Householders, Mechanics, Farmers and Carpenters that Sells them Quality Tools at Low Cost Prices.

ADVANTAGES OF TOOL ISLAND MERCHANDISE PLAN:—

The Hardware Store is the logical place to buy Tools. Worth Tools are competitive in Price with Chain Stores and Mail Order Houses.

Tool Island attractively displays 112 Worth Tools that have proven to be most popular and are the fastest selling items in the Tool line.

The Tool Island attracts customer attention, creates customer interest and desire on the part of your store " shoppers" to purchase tools that they normally would not think of buying.

The Worth Tool Island with all tools on it requires very little floor space.

All Tools are Labelled and Priced.

This Tool Island display stand is well built and attractively finished to give life time service.

YOU—Mr. Hardware Merchant, need this Modern Merchandise Plan—Order a Worth Tool Island now from us. Ask our Salesman to give you complete information.

See Pages 21, 22, 23, 24, 25 and 26 for detail information on the individual tools featured with the Tool Island.

A
B
C
D
E

Effanbee dolls ... always finest quality

(A) EFFANBEE'S "SWEETIE-PIE." Big Glassene eyes move from side to side . . . she cries and goes to sleep. Hair is real lambskin fur . . . never mats or tangles. Composition head, arms, legs. Body stuffed with soft cotton. Head turns. Dressed in dotted swiss with perky batiste ruffles. Sash tied behind in huge bow. Matching bonnet. Lace-trimmed lawn slip; white panty; white socks, shoes.
48 T 2374—17 in. tall. Ship. wt. 2 lbs. 4 oz. $9.25

(B) EFFANBEE BABY IN SNOWSUIT AND HELMET of cotton chinchilla. Underneath she wears broadcloth romper pictured at left. Glassene flirting eyes move from side to side; she cries, sleeps. Hair is real lambskin fur. Real lashes. Soft cotton body. Composition head, arms, legs. Head turns. White socks; shoes.
48 T 2373—24 in. tall. Ship. wt. 5 lbs. 1 oz. $12.95
48 T 2372—19 in. tall. Ship. wt. 4 lbs. 8.98

(C) EFFANBEE DOLL IN SHEER BLACK MARQUISETTE negligee, grown-up "bra" and lace-trimmed panties. Black grosgrain shoes have tiny heels. She has a slim, lovely fashion figure. All composition . . . body jointed at shoulders and hips. Life-like hands with tiny separate fingers. Turning, tilting composition head. Fine human hair. Sleeping Glassene eyes with real lashes.
48 T 2403—18 in. tall. Ship. wt. 2 lbs. 4 oz. $6.75

(D) (E) EFFANBEE GIRL DOLLS wear flower-trimmed pique dresses with button closings; matching panties, rayon socks, slippers. Sculptured composition bodies, legs, heads. Jointed arms, legs. Turning, tilting heads. Fine human hair. Sleeping Glassene eyes, real lashes.
(D) 48 T 2556—21 in. tall. Ship. wt. 4 lbs. $8.45
(E) 48 T 2557—18 in. tall. Ship. wt. 3 lbs. 6.25

BE SURE TO READ "FACTS ABOUT DOLLS" ON PAGE 70

Effanbee baby dolls with wardrobes

A Effanbee Twins in Trunk-Type Case. Cunning twins, boy and girl dolls, completely outfitted, and with extra clothing, all neatly packed in a sturdy fiberboard case. Dressed in Beige snowsuits of soft rayon twill with contrasting collars, cuffs. Cleverly styled matching bonnet and cap. Coats fasten with cloth buttons; ski pants button at ankles and waist. Underneath they wear white cotton broadcloth rompers, white rayon socks, brown artificial leather shoes.

Twins are 14 in. tall with composition arms, legs and heads. Hair is fine mohair sewed on cloth foundation, combed in baby ringlets. Cloth bodies stuffed with soft cotton. Heads turn and tilt. Sleeping Ginsanne eyes; real lashes. Extra playsuits of cotton broadcloth inside lid of case . . . pink pants and dress for the girl, blue and white suit for the boy.
46 T 2378—Twin Dolls. Ship. wt. 5 lbs. 14 oz. $15.50

B Effanbee Colonial Doll. 12 inches tall—small jewel-like doll. Daintily made . . . all composition with tilting head, jointed arms and legs; carefully hand painted eyes and lashes. Fine quality Mohair curls sweep to her shoulders. Dainty hat of rayon and lace. Blue colonial dress of flowered rayon over pink skirt with lace trim. Lace trimmed pantalettes. Sandals and stockings. Ship. wt. 2 lbs. 4 oz.
46 T 2401—Effanbee Colonial Doll. $3.69

C Dy-Dee Doll and 20-pc. Layette. The last of our Effanbee Dy-Dee dolls for the duration . . . these dolls were made before the war. We hope our stock is large enough to enable us to fill all orders received but would suggest ordering early because we can't get any more after our present stock is sold.

Dy-Dee drinks from her bottle . . . wets her diaper like a real baby. Wash her . . . powder her . . . watch her blow soap bubbles through her bubble pipe. Soft ears to wash behind and tiny nostrils to clean with a swab. Shampoo her hair too, it's thick, soft genuine lambskin, fastened with waterproof adhesive.

Dy-Dee is 20 inches tall. Molded of finest rubber. Hard rubber head turns, tilts. Jointed arms and legs. Glassene sleeping eyes, real lashes. Only Dy-Dee can go to sleep sitting up—keep her eyes open lying down. Finest quality . . . she's made by Effanbee.

Doll and 20-Piece Layette packed in hinged case with handle and snaps. Dy-Dee wears Birds-eye diaper and cotton flannel jacket. Extra clothes consist of: Blue and White cotton bonnet and dress with real buttons and buttonholes. White slip; rayon socks; white shoes. Cotton flannel bathrobe; striped pajamas with drop seat. Extra diaper, shirt. Rubber panties, cotton blanket. Talcum, soap, cotton, swabs, nursing bottle, bubble pipe, spoon. Ship. wt. 11 lbs.
46 T 2532M—Dy-Dee and 20-Pc. Layette in Case. $21.00

Facts about dolls

WHAT MAKES ONE DOLL COST MORE THAN ANOTHER? You can pay as little as 45c for a doll at Wards or you can pay as much as $24.50. Frequently a small doll costs more than a large one. The difference is not in size, but in quality . . . quality of material and workmanship and finishing . . . quality of eyes, hair and clothing.

WHAT ARE DOLLS MADE OF? Most doll parts are made of composition. Parts vary in quality to some extent with ingredients, but principally in the length of time taken to make and finish them. Effanbee doll parts are made more slowly and carefully than others. This makes them less fragile. They are hand finished with several coats of enamel to look and feel like real skin. Effanbee doll hands are beautifully modeled, with separate fingers, tiny palm markings, tinted nails. On less carefully made dolls the parts are rough and coarse, and the fingers are not separated.

WHAT ABOUT WIGS? Some fine quality dolls have molded and painted hair. Some very inexpensive dolls have real hair. Wigs are usually made of human hair or mohair. They may be coarse and skimped, or fine and silky. A good mohair wig is more desirable and costs more than a poor quality human hair wig. Effanbee's "Tousle-Tot" wig is genuine lambskin fur, never mats or tangles, can be cleaned with a damp cloth. All Wards doll wigs, whether mohair or human hair, are firmly sewed to a cloth foundation . . . never just pasted on the head.

WHAT ABOUT EYES? Sleeping eyes are of two types. The best, most lifelike are Glassene, celluloid iris over steel base. Second quality, painted on metal, do not have the sparkle of Glassene eyes. Most Effanbee dolls have Glassene eyes. Painted eyes, usually found on inexpensive dolls, are sometimes used with great artistry on fine quality dolls.

WHAT ABOUT CLOTHES? On fine dolls the fabrics are the best . . . cut, fitted and finished like children's clothes. Material is not skimped. Dresses have button or snap closings. Clothes on cheaper dolls are poorer fabrics, simply sewn, casually fitted, with pin closings. Effanbee dolls wear clothes of fine materials, carefully made and fitted.

WHAT ARE EFFANBEE DOLLS? Effanbee dolls are the finest dolls made. They have the finest workmanship and finishing, finest eyes, hair and clothing. All are attractively gift boxed. The name Effanbee is your assurance of quality.

FIVE OF THE BEST MADE DOLLS IN THE WORLD

Effanbee dolls shown on opposite page

(A) EFFANBEE DOLL IN PARTY DRESS of glistening blue rayon taffeta, embroidered with delicate pink and blue flowers. Long, very full skirt with net ruffle. Fitted bodice has puffed sleeves. She wears long blue rayon slip, lace-trimmed panties, white rayon socks, "gold" sandals with tiny heels. Body is made entirely of hard-to-break composition . . . beautifully formed. Life-like hands have tiny separate fingers. Jointed arms and legs. Turning, tilting head. Glassene sleeping eyes with real lashes. Fine human hair. Ship. wt. 3 lbs. 5 oz.
48 T 2389—18 inches tall. $9.98

(B) LOVELY EFFANBEE BRIDE makes a charming centerpiece at wedding breakfast or bridal shower . . . or becomes the treasured possession of the child who owns her. Bridal Gown is white slipper satin; fastens with tiny pearl buttons. Net veil on satin bridal cap, embroidered with tiny seed pearls. Long white slip; lace-trimmed panties; white hose; sandals with real heels. All composition . . . beautifully modeled, jointed arms and legs. Turning, tilting head. Exquisite hands. Fine human hair. Glassene sleeping eyes; real lashes. Ship. wt. 3 lbs. 8 oz.
48 X 2386—18 inches tall. . . . $11.79

(C) EFFANBEE DOLL IN PLAID FORMAL. Full, swirling skirt of crisp taffeta in gorgeous colorful plaid. Fitted bodice has ruffled puff sleeves; gathered with taffeta sash. She wears long red rayon ruffled slip. Lace-trimmed white rayon panties. White rayon hose; "gold" sandals with tiny heels. All composition . . . beautifully sculptured. Jointed arms and legs. Life-like hands have tiny separate fingers, tinted nails. Turning, tilting composition head. Fine quality human hair. Glassene sleeping eyes with real lashes. Ship. wt. 3 lbs. 3 oz.
48 T 2391—18 inches tall. $9.98

(D) EFFANBEE DOLL IN THREE SIZES . . . the largest is a gorgeous doll to offer as a Contest Prize. Formal dress has bouffant rayon taffeta skirt with glistening metallic dots. Flared peplum of black velveteen. Pink rayon slip, lace trimmed panties, long rayon hose, "gold" sandals. Made entirely of hard-to-break composition . . . beautifully sculptured. Exquisite hands, individual slender fingers. Jointed arms and legs. Fine human hair. Turning, tilting head. Sleeping Glassene eyes; real lashes.
48 T 2388M —27 in. tall. Ship. wt. 7 lbs. 8 oz. . . $24.50
48 T 2398 —21½ in. tall. Ship. wt. 4 lbs. 14 oz. . . . 14.75
48 T 2396 —18 in. tall. Ship. wt. 3 lbs. 5 oz. . . . 9.98

(E) EFFANBEE'S "LITTLE LADY." Her long, filmy party dress has ruffled skirt of white net, embroidered with flowers; white satin bodice, big puff sleeves gathered with tiny floral bouquets. Billowy underskirt of crisp Pink taffeta. She wears lace-trimmed panties; white rayon socks; "gold" sandals with tiny heels. She has a lovely, slender figure . . . made entirely of hard-to-break composition . . . perfectly sculptured. Beautiful hands have tiny separate fingers, tinted nails. Jointed arms and legs. Turning, tilting head. Sleeping Glassene eyes with real lashes. Fine human hair.
48 T 2368—20½ in. tall. Ship. wt. 3 lbs. 13 oz. . . . $9.98

EFFANBEE DOLLS LISTED ABOVE ARE PACKED IN GIFT BOX SHOWN ON PAGE 75
FOR TIME PAYMENTS SEE PAGE 109

"AMERICA'S BEST" AXES

"AMERICA'S BEST" Axes are of the highest quality and finish. Money cannot buy a better axe for it is not made.

Only the very best grades of steel suitable for manufacturing fine axes are used. They are hammer forged and worked by master axe makers, and tempered by the most up-to-date methods of heat treating and tempering. The bits are ground to a razor edge and given a mirror finish.

"AMERICA'S BEST" Axes are furnished with three grades of handles and each will stand long hard use. The selected strong tough hickory handles are driven into the eye and securely wedged. They will not come loose, even in hardest service. The perfect hang of the head and correct balance which is checked on each axe gives it the right feel and easy swing.

"AMERICA'S BEST" Axes are the choice of professional woodsmen:—First, for Quality, Second, Balance Third Finish. When you want everything that can put into an axe, buy **"AMERICA'S BEST"**.

HANDLES FOR "AMERICA'S BEST" AXES

Three grade of handles are used in **"AMERICA'S BEST"** Axes.

No. 50—Handle is straight grained, clear, selected all white hickory, octagon shape. Furnished in single bit crooked or straight and double bit straight. It is the highest grade handle made.

No. 25—Handle is octagon shape, good grade, clear hickory, furnished in single bit crooked or straight and double bit straight. Will stand up under heaviest use.

No. Morhand—Handle is the same as No. 25 only oval in shape. Furnished in the same styles.

Any of these handles in **"AMERICA'S BEST** Axes will give excellent service.

Axe Base Prices are on Sizes 3-4 lbs. For other sizes Add Advances. Packed ½ Doz. to a Carton.

Baltimore Kentucky Pattern

Red and Gold Combination Finish

SINGLE BIT—UNHANDLED

No.	Base Per Doz.
ASK	**$33.00**

Stock Sizes:—3-4, 3½-4½" 4-5 and 4½-6 pounds.

SINGLE BIT—HANDLED

No.	Base Per Doz.
ASKH-50	**$41.50**

Handled with No. 50 Octagon Crooked or Straight, Best Grade Hickory Handle.

ASKH-25 **$39.50**

Handled with No. 25 Octagon Crooked or Straight Clear Hickory Handle.

ASKH-MH **$39.50**

Handled with Morhand Oval Crooked or Straight Good Grade Hickory Handle.

Stock Sizes:—3-4, 3½-4½, 4-5 and 4½-6 lbs.

"AMERIC'S BEST"

TOOLS ARE OF THE

HIGHEST QUALITY

Dayton Pattern

All Black Finish

SINGLE BIT—HANDLED

No.	Base Per Doz.
ASBDH-50	**$39.50**

Handled with No. 50 Octagon Crooked or Straight Best Grade Hickory Handle.

ASBDH-25 **$37.50**

Handled with No. 25 Octagon Crooked or Straight Clear Hickory Handle.

Stock Sizes:—3-4 and 3½-4½ lbs.

AXE ADVANCES

	Doz.	List Doz.
All 3, 3¼ or 3½ or Assorted 3 to 4	Base	
All 4 lb. or assorted 3¼ to 4½ or 3½ to 4½	**$2.00**	*$1.00*
All 4½ lb. or assorted 3¾ to 4¾ or 4 to 5	**4.00**	*2.00*
All 5 lb. or assorted 4¼ to 5¼ or 4½ to 6	**6.00**	*3.00*
All 5½ lb. or assorted 5 to 5½ or 5 to 6	**8.00**	*4.00*
All 6 lb. or assorted 5½ to 6	**10.00**	*5.00*

Dayton Pattern

Red and Gold Combination Finish

SINGLE BIT—UNHANDLED

No.	Base Per Doz.
ASD	**$33.00**

Stock Sizes:—3-4, 3½-4½, 4-5 and 4½-6 lbs.

SINGLE BIT—HANDLED

No.	Base Per Doz.
ASDH-50	**$41.50**

Handled with No. 50 Octagon Crooked or Straight, Best Grade Hickory Handle.

ASDH-25 **$39.50**

Handled with No. 25 Octagon Crooked or Straight Clear Hickory Handle.

ASDH-MH **$39.50**

Handled with Morhand Oval Crooked or Straight Good Grade Hickory Handle.

Stock Sizes:—3-4, 3½-4½, 4-5 and 4½- 6 lbs.

AXES

Axe Base Prices are on Sizes 3-4 lb. For other Sizes Add Advances as shown below.

MORHAND AXES

Made of Highest Grade Axe Steel with Polished Bits and Red Painted Head, and will give very satisfactory service. Single Bit Morhand Axes are handled with Morhand Oval crooked hickory handles.

Double Bit Morhand Axes are handled with Morhand straight Oval hickory handles.

Kentucky Pattern

SINGLE BIT—HANDLED

No.	Base Per Doz.
MHKPH	$33.50

Handled with Morhand Oval crooked good grade hickory handle

Stock Sizes:—3-4, 3½-4½ and 4-5 lbs.

MORHAND PERFECT

Dayton Pattern

HANDLED

No.	Base Per Doz.
MHDPH	$33.50

Handled with Morhand Oval Crooked good grade hickory handle.

Stock Sizes:—3-4, 3½-4½ and 4-5 lbs

MORHAND PERFECT

Crown Pattern
HANDLED

No.	Base Per Doz.
MHDCPH	$41.50

Handled with Morhand Oval straight good grade hickory handle

Stock Sizes:—3-4, 3½ 4½ and 4-5 lbs

CHAMPION

Available in Single or Double Bit

SINGLE BIT
Dayton Pattern
HANDLED

No.	Base Per Doz.
CH	$26.50

With Crooked Handle

Stock Sizes:—3½ lbs.

Crown Pattern
HANDLED

No.	Base Per Doz
CDH	$34.50

Axe is painted an attractive black color. Handles are oval genuine hickory, walnut color and full length

ROBERT MANN

Axe has gold finish with polished bits, White lacquered Morhand crooked oval handles, Red tipped

Kentucky Pattern
Handled

No.	Doz. Base
RMSKH	$40.50

Stock Sizes 3-4, 3½-4½,

ROBERT MANN

Gold Finish with Polished Bits. Handled with Morhand oval straight white lacquered handle, Red tipped.

Crown Pattern
DOUBLE BIT—UNHANDLED

No.	Doz. Base
RMDC	$41.00

Stock Sizes:—3-4, 3½-4½, 4-5 lbs.

DOUBLE BIT—HANDLED

No.	Doz. Base
RMDCH	$48.50

Stock Sizes:—3-4, 3½-4½, and 4-5.

AXE ADVANCES

	Doz.	List Doz
All 3, 3¼ or 3½ or Assorted 3 to 4	Base	
All 4 lb. or assorted 3¼ to 4½ or 3½ to 4½	$2.00	$1.00
All 4½ lb. or assorted 3¾ to 4¾ or 4 to 5	4.00	2.00
All 5 lb. or assorted 4½ to 5½ or 4½ to 6	6.00	3.00
All 5½ lb. or assorted 5 to 5½ or 5 to 6	8.00	4.00
All 6 lb or assorted 5½ to 6	10.00	5.00

CHIPPEWA CHIEF

Black Finish Axe with Polished Bit. Morhand crooked oval white handle, Red tipped

Southern Kentucky Pattern
SINBLE BIT—HANDLED

No.	Doz. Base
CCSH	$40.50

Stock Sizes:—3-4 and 3½-4½ lbs.

Black Finish Axe with Polished Bit. Morhand straight oval white lacquered handle, Red tipped.

Crown Pattern
DOUBLE BIT—HANDLED

No.	Doz. Base
CCDH	$48.50

Stock Sizes:—3-4 and 3½-4½ lbs.

All Axes Packed ½ Doz. to a Carton.

"AMERICA'S BEST" AXES

SEE PAFE 2 FOR "AMERICA'S BEST" AXE FEATURES AND INFORMATION ON HANDLES.

Axe Base Prices are on Sizes 3-4 lbs. For other sizes Add Standard size Advances

Dayton Perfect Pattern
Red and Gold Combination Finish

SINGLE BIT—UNHANDLED

No.	Base Per Doz.
ASDP	$33.00

Stock Sizes:—3-4, 3½-4½ and 4-5 lbs

SINGLE BIT—HANDLED

No.	Base Per Doz.
ASDPH-50	$41.50

Handled with No. 50 octagon crooked or straight, best grade hickory handle.

ASDPH-25	$39.50

Handled with No. 25 octagon crooked or straight, clear grade hickory handle.

ASDPH-MH	$39.50

Handled with Morhand crooked or straight **Oval** good grade hickory handle.

Stock Sizes:—3-4, 3½-4½, 4-5 lbs.

Crown Pattern
Red and Gold Combination Finish

DOUBLE BIT—UNHANDLED

No.	Base Per Doz.
ADC	$41.00

Stock Sizes:—3-4, 3½-4½, 4-5, 4½-6 pounds.

DOUBLE BIT—HANDLED

No.	Base Per Doz.
ADCH-50	$49.50

Handled with No. 50 octagon straight best grade hickory handle.

ADCH-25	$47.50

Handled with No. 25 octagon straight clear hickory handle.

ADSH-MH	$47.50

Handled with Morhand straight oval good grade hickory handle.

Stock Sizes—3-3½, 3-4, 3½-4½, 4-5, 4½-6 pounds.

Crown Pattern
All Black Finish

DOUBLE BIT—HANDLED

No.	Base Per Doz.
ADBCH-50	$47.50

Handled with No. 50 octagon straight best grade hickory handle.

ADBCH-25	$45.50

Handled with No. 25 octagon straight clear hickory handle.

Stock Sizes:—3-4 and 3½-4½ pounds.

NOTE:—Unhandled Black Finish Axes can be furnished only on special order from factory.

Crown Perfect Pattern
Red and Gold Combination Finish

DOUBLE BIT—UNHANDLED

No.	Base Per Doz.
ADCP	$41.00

Stock Sizes:—3-4 and 3½-4½ pounds.

DOUBLE BIT—HANDLED

No.	Base Per Doz.
ADCPH-50	$49.50

Handled with No. 50 octagon straight best grade hickory handle.

ADCPH-25	$47.50

Handled with No. 25 octagon straight clear hickory handle.

ADCPH-MH	$47.50

Handled with Morhand **Oval** straight good grade hickory handle.

Stock Sizes:—3-4, 3½-4½, and 4-5 lbs.

Reversible Pattern

Red and Gold Combination Finish

DOUBLE BIT—UNHANDLED

No.	Base Per Doz.
ADR	$41.00

Stock Sizes:—3-4, 3½-4½,4-5 and 4½-6 pounds.

DOUBLE BIT—HANDLED

No.	Base Per Doz.
ADRH-50	$49.50

Handled with No. 50 octagon straight best grade hickory handle.

ADRH-25	$47.50

Handled with No. 25 octagon straight clear hickory handles

ADRH-MH	$47.50

Handled with No. Morhand **Oval** straight good grade hickory handle

Stock Sizes:—3-4, 3½-4½, 4-5 and 4½-6 pounds.

AXE ADVANCES

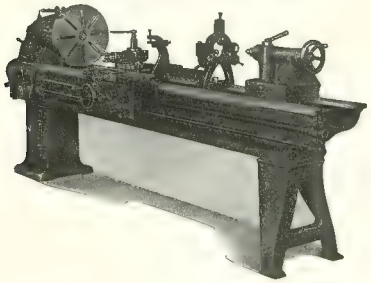
	Doz.	List Doz.
All 3, 3¼ or 3½ or Assorted 3 to 4	Base	
All 4 lb. or assorted 3¼ to 4½ or 3½ to 4½	$2.00	$1.00
All 4½ lb. or assorted 3¾ to 4¾ or 4 to 5	4.00	2.00
All 5 lb. or assorted 4¼ to 5¼ or 4½ to 6	6.00	3.00
All 5½ lb. or assorted 5 to 5½ or 5 to 6	8.00	4.00
All 6 lb. or assorted 5½ to 6	10.00	5.00

All Axes Packed ½ Doz. to a Carton.

ENGINE LATHES

SIDNEY STANDARD PATTERN LATHES

10" to 20" Swing, Bed Any Length Required.



18"x10 Ft. Sidney Standard Pattern Geared Head Lathe for Motor Drive

SIDNEY STANDARD PATTERN ENGINE LATHES

Sidney Standard Pattern Lathes are made in sizes 15" to 36" swing and any length bed in both cone and geared head types and with individual motor drive.

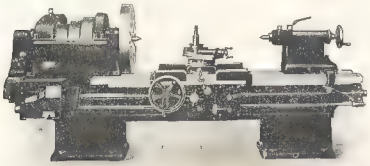
Below is given some of the principal specifications of Sidney Standard Pattern Lathes:

	10"	12"	14"	16"	18"	20"
HEADSTOCK						
Swing over bed	10½ inches	12½ inches	14½ inches	16½ inches	18½ inches	20½ inches
Swing over carriage	6½ inches	8½ inches	9¼ inches	11¼ inches	12½ inches	14½ inches
Hole through spindle	1⅛ inches	1⅛ inches	1⅜ inches	1⅜ inches	1⅞ inches	1⅞ inches
Front spindle bearing	2½x3¼ inches	2½x3½ inches	2½x4½ inches	2½x4½ inches	3x4½ inches	3x4½ inches
Rear spindle bearing	1⅝x3¼ inches	1⅝x3½ inches	1⅞x2½ inches	1⅞x2¾ inches	2¼x3½ inches	2¼x3½ inches
Taper of centers	No. 3 Morse	No. 3 Morse	No. 3 Morse	No. 3 Morse	No. 4 Morse	No. 4 Morse
LEAD SCREW, Diameter and threads per inch	1 inch–8	1 inch–8	1⅛inch–4	1⅛ inch–4	1⅛ inch–4	1⅛ inch–4
Range of threads per inch	3 to 96	3 to 96	2 to 64	2 to 64	2 to 64	2 to 64
Range of feeds per inch	.002 to .066	.002 to .066	.006 to .25	.006 to .25	.006 to .25	.006 to .25
TAILSTOCK						
Spindle diameter	1½ inches	1½ inches	1⅝ inches	1⅝ inches	2 inches	2 inches
Tailstock spindle traverse and setover	3¼ ½ inches	3¼–½ inches	5½–¾ inches	5½ ¾ inches	6–⅞ inches	6–⅞ inches
CARRIAGE Length	18½ inches	18½ inches	21½ inches	21½ inches	27 inches	27 inches
Carriage Bridge width	5¼ inches	5¼ inches	6⅛ inches	6¾ inches	7¾ inches	7¾ inches
Countershaft friction pul ley size	2½x8 inches	2½x8 inches	10x3½ inches	10x3½ inches	12x3½ inches	12x3½ inches
Countershaft speed	200 R. P. M.	200 R. P M	200 R. P. M.	200 R. P. M	260 R. P. M.	260 R. P. M.
Size of lathe tool	½x¾ inch	½x¾ inch	½x1¼ inches	⅝x1¼ inches	¾x1½ inches	¾x1½ inches

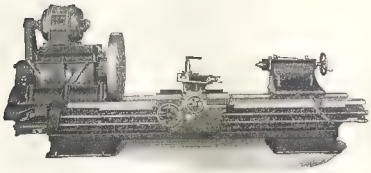
ENGINE LATHES

SIDNEY HEAVY PATTERN ENGINE LATHES

15" to 36" swing, any length bed, cone and geared head. Can be arranged for individual motor drive.



25" Sidney Heavy Pattern Cone Head Engine Lathe.



30" Sidney 12-speed All-Geared Head Lathe, showing motor mounted on top of Headstock.

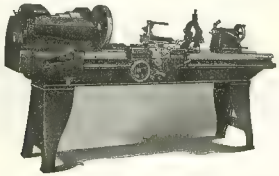
The entire headstock is fitted with all steel gears, heat treated, and the jaw clutches, providing a positive driving power, are also heat treated. The back gear is 4-pitch, and all other gears are 5-pitch The gears are all sliding transmission type with one jaw cutch used when the back gear is out

The drive shaft runs in bronze and ball bearings, with the intermediate shaft stationary, and the intermediate cluster gear running on shaft with the gear bronze bushed. The back gear is also bronze bushed, and runs on the same shaft.

The three levers in the front of the headstock provide the various changes of speeds. An oil tight cover is provided for the head, permitting all the gears to run in a constant oil bath.

ENGINE LATHES

SIDNEY STANDARD PATTERN ENGINE LATHES



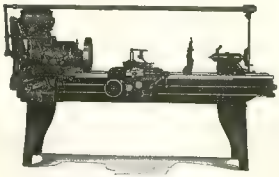
16"x8 Ft. Sidney Standard Pattern Cone Head Lathe

Sidney Standard Pattern Lathes are made in sizes 10" to 20" swing inclusive in both cone and geared head types and with individual motor drive

Our Machine Tool Department will gladly submit detail information and prices on request.

SIDNEY MEDIUM PATTERN ENGINE LATHES

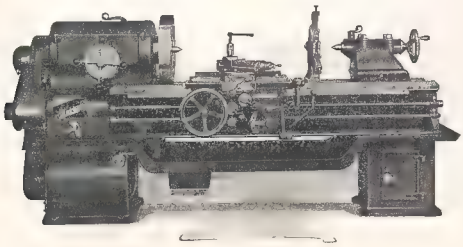
Sidney Medium Pattern Lathes are made in sizes 14", 15", 18", 20" and 24" swing and any length bed. As space here will not permit complete description, ask for special bulletin and prices.



18"x4 ft. Sidney Medium Pattern Lathe.

Sidney Medium Pattern Lathes can also be furnished with headstock and arranged with single pulley drive or individual motor drive.

SIDNEY MONOTROL ENGINE LATHE



Monotrol Geared Head Lathes were designed and built to meet the exacting and strenuous requirements of modern manufacturing. Large and expertly planned production schedules depend entirely upon the ability of machines and tools to maintain these rigid schedules without variation.

Hence Monotrol is the answer to the growing demand for better and faster Lathes.

The Tool Room where accuracy is paramount, the production shops where ease of operation and speed are essential, the general purpose machine shop—where a machine is called upon to produce a repair part at a moment's notice—wherever a lathe is used—there Monotrol has been tried and tested. Its versatility and dependability have been proven by actual practice—it is the ideal machine for any shop—a proven asset

Monotrol Lathes are built in 14, 16, 18 and 20-inch sizes.

The front of Monotrol apron shows the snap lever control for longitudinal and cross feed through positive clutch arrangement. Instantaneous control for starting and stopping feeds in both directions guaranteed only through this mechanism with snap levers Consider the advantage of eliminating spoiled jobs by having at all times instantaneous control of feed and cutting tool. This is an exclusive Monotrol feature. Spring release guarantees ease in operation of levers on lightest or heaviest cuts ball bearing thrust adjustment.

In the head the Herringbone continuous tooth gears are of the double spinal type and are self-centering, compensating for thrust in either direction and guaranteeing positive elimination of gear tooth or tool marks on finished turning work Herringbone gears are only type of spiral gears affording possibility of forward or reverse motion of lathe spindle on account of self-compensation of equalizing thrust, an exclusive Monotrol and a decidedly important feature in a modern engine lathe.

The cut of the headstock on this page shows the Herringbone gears and if desired Spur Gears can be furnished instead of Herringbone as shown.

HEADSTOCK WITH HERRINGBONE GEARS

Monotrol Lathes are equipped with either Timken Tapered roller bearings or large taper bronze bearing (optional), insuring reduction of friction load to a minimum and making possible the entire elimination of chatter on boring and turning at long distances from spindle.

PLOW STOCKS

GEORGIA RATCHET

Size Beam	Size Foot	Weight	Each	List
3½ Ft.	¾"	19 lbs.	**$4.20**	*$3.00*
Extra Feet	¾"	7 lbs.	**1.61**	*1.15*
3½ Ft	1"	19 lbs.	**4.34**	*3.10*
Extra Feet	1"	7½ lbs.	**1.75**	*1.25*

Equipped with especially designed Ratchet on top of beam which prevents foot from slipping and also protects Beam from wearing out. Handles grained hardwood nicely varnished. Metal parts are black finish.

JEFFERSON BENT FOOT

Size Beam	Size Foot	Weight	Each	List
3½ Ft.	¾"	22 lbs.	**$4.69**	*$3.35*
Extra Feet	¾"	9½ lbs.	**1.96**	*1.40*

Popular Type Stock with foot made of one continuous piece of iron bent to shape. Has adjustable feature for any angle desired. Handles and Beam natural varnished. Metal parts black.

RELIABLE WELDED FOOT

Size Beam	Size Foot	Weight	Each	List
3 Ft. 10"	¾"	23 lbs.	**$5.32**	*$3.80*
Extra Feet	¾"	10 lbs.	**2.52**	*1.80*

Similar to Jefferson except the toe of the foot is welded together and not one continuous piece. A very serviceable Stock.

CHAMPION RIVETED FOOT

Size Beam	Size Foot	Weight	Each	List
3 Ft 10"	¾"	23 lbs.	**$5.32**	*$3.80*
Extra Feet	¾"	10 lbs.	**2.52**	*1.80*

Same features as the Jefferson except toe of foot is riveted rather than bent or welded. Universally used in all sections

PERFECTION

No.	Steel Beam Weight	Each	List
0	37 lbs.	**$ 8.12**	*$5.80*
1-Horse	39 lbs.	**9.38**	*6.70*
2-Horse	52 lbs.	**11.55**	*8.25*

High Carbon Steel Beam, will not break or bend. Has very large throat, will not choke. Handles may be raised or lowered. Take any kind of plow shape.

2-Horse type most satisfactory for subsoiling or for breaking out middles.

★L—1—EM

BOSS

Size Beam	Size Foot	Weight	Each	List
4 Ft.	¾"	24 lbs.	**$5.46**	*$3.90*
(f) Extra Feet	⅞"	8½ lbs.	**2.24**	*1.60*

Foot is pivoted on a bolt through the beam and adjusted by means of heavy foot brace in rear, making this stock a strong favorite wherever a durable stock is needed. Handles and sturdy white oak beam are varnished. Metal parts black finish.

NUMBER 25

Size Beam	Size Foot	Weight	Each	List
3 Ft. 10"	¾"	23 lbs.	**$5.32**	*$3.80*
(f) Extra Feet	⅞"	8½ lbs.	**1.96**	*1.40*

Foot is recessed out in order to make Heel Bolt fit better Handles and Beam are varnished. All metal parts are black finish.

PET DOUBLE

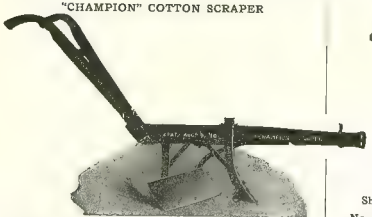
Size Beam	Weight	Each	List
3 Ft. 10"	35 lbs.	**$8.96**	*$6.40*
(f) Extra Feet	6 lbs.	**1.61**	*1.15*

Strongly built, simply constructed Stretcher Rods have long threads making it easy to adjust for any width row. Feet can be run one ahead of the other or side by side. Handles and Beam varnished with metal parts black finish.

(f)—F.O.B. Factory Only.

SCRAPERS AND CULTIVATORS

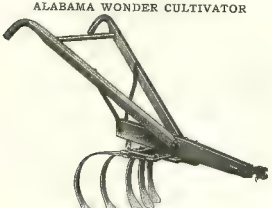
"CHAMPION" COTTON SCRAPER



No.	Weight	Each	List
Champion	44 lbs.	$12.60	$9.00
Extra Blades			1.50

Polished and lacquered 6½x15" blade, varnished wood beam (4 ft.) and handles, iron parts painted black. Uses No. 3 Plow Bolts ⅜x1".

ALABAMA WONDER CULTIVATOR

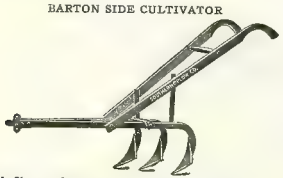


Shipped Less Fenders unless otherwise Specified

Tooth	Weight Each	Each	List
5 Big Head	60 lbs.	$14.84	$10.60
5 Detachable Pt.	60 lbs.	14.70	10.50

Rigid construction with double rear cross bars and wedge shaped adjusting bars. No top brace bolt or nut adjustment. Teeth are oil tempered spring steel.

BARTON SIDE CULTIVATOR



Blade Sharpened on Two Sides and Fastened by Plow Bolts

	Weight	Each	List
Barton—With Blade	45 lbs.	$10.50	$7.50 f
Extra Blade—Less Bolts	1½ lbs.	.35	.25

Uses No. 3 Plow Bolts ⅜x2½", or Common Carriage.

CHAMPION CULTIVATORS

Shipped Less Fenders unless otherwise Specified

No.	Tooth	Weight	Each	List
Champion	5 Big Head	43 lbs.	$12.10	$ 8.60
Champion	5 Detachable Pt.	46 lbs.	11.90	8.50
Champion	7 Big Head	51 lbs.	14.91	10.65
Champion	7 Detachable Pt.	58 lbs.	14.70	10.50

Universal with plate adjustment and No. AB Teeth in 5 and 7 tooth. Same price and weight as Champion.

Simple and rigid adjustment. Adjustment bars wedge-shaped, thicker in front than rear. The harder the strain the tighter they hold. Bars are slotted with a bolt passing through them and the beam, and tightened on top with crank nut. Full size teeth are made of oil tempered best quality spring steel with only one hole in them and held strongly by double rear cross bars.

EXTRA PARTS

No.		Each	List
58	—Cuff and Tooth Holder Clamps	$ .09	$ .06
DC-10	—Cuff or Tooth Holder Clamps	.14	.10

On DC-10, Specify whether long nipple, short nipple or no nipple wanted.

Uses common carriage bolts ⅜x1½" on frame and tooth blade and No. 3 plow bolts ⅜x1" on Cultivator Blade.

JERRY SPRING TOOTH CULTIVATOR

Tooth	Weight Each	Each	List
5 Big Head	42 lbs.	$12.04	$8.60
5 Detachable Pt.	45 lbs.	11.90	8.50

Short beam, adjusting bars, with 5 holes, each released by nut, either half of cultivator can be adjusted independent of the other half, plain one hole teeth.

EXTRA PARTS

Bolt Bushing in Front Brace Tooth

No.		Each	List
DC-12	—Short Shank	$ .06	$ .04
DC-11	—Long Shank	.09	.06

Short Cuff or Tooth Holder at Rear Brace

DC-10		.14	.10

Specify long, short or no nipple on DC-10

Uses No. 3 Plow Bolts ⅜x1" for Cuff and ⅜x1¼" Carriage Bolts for Tooth Front Brace.

BREAK PIN DOUBLE SHOVEL

LESS BLADES

No.	Weight	Each	List
Break Pin Double Shovel	40 lbs.	$10.00	*$7.15*

Recommended for ground with rocks and roots. Malleable Break Pin Foot adjustable to any pitch. To make "Break" properly remove bolt out of foot and drive wooden peg in its place. Uses any kind of blade. Varnished handles.

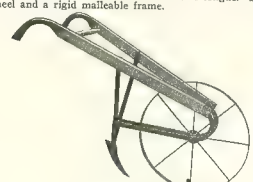
GARDEN PLOWS

Wheels and all attachments painted green, balance of iron parts painted bright red. Handles are varnished with red tip.

MORHAND No. 1

No.	Weight	Each
Morhand-1	16 lbs.	$4.90

Well suited for vegetable and flower gardeners. Complete with one narrow and one wide bull tongue. Has 18" wheel and a rigid malleable frame.



MORHAND No. 2

No.	Weight	Each
Morhand-2	23 lbs	$5.60

Complete with one narrow and one wide bull tongue. Has 24" wheel, adjustable oak handle and bent steel frame. Easy draft.

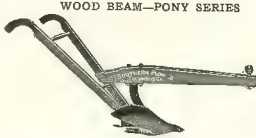
ATTACHMENTS AND PARTS FOR GARDEN PLOWS

	Each	List
Turn Shovel	$ .35	*$ .25*
Narrow Bull Tongue	.21	*.15*
Wide Bull Tongue	.28	*.20*
Sweep	.35	*.25*
Wrench	.14	*.10*
5 Tine Scratcher	1.05	*.75*

★L—I—EM

STEEL PLOWS

WOOD BEAM—PONY SERIES



All Furnished with Extra Point.

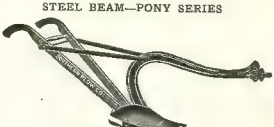
	No.	Cut	Horse	Weight	Each	List
	Pony	7"	1	38 lbs.	$12.60	*$9.00*
f	A-0	8"	1	40 lbs.	14.00	*10.00*
f	B-0	9"	2	45 lbs.	15.40	*11.00*

Designed for sandy and mixed soils. Has capped standard, open hearth steel point, landside and moldboard, polished steel frog and slip heel Varnished hardwood Beam and Handles.

EXTRA PARTS FOR WOOD BEAM

For Plow	Pony		A-0		B-0	
	Each	List	Each	List	Each	List
Steel Point	$1.12	*$ .80*	$1.54	*$1.10* f	$1.75	*$1.25* f
Cast Point	.70	*.50*	----	----	----	----
Steel Mold	2.38	*1.70*	3.08	*2.20* f	3.50	*2.50* f
Outside Land	.70	*.50*	.77	*.55* f	.77	*.55* f
Inside Land	.70	*.50* f	.70	*.50* f	.70	*.50* f
Slip Heel	.21	*.15* f	.21	*.15* f	.21	*.15* f
Wood Beam	3.08	*2.20*	3.08	*2.20* f	3.50	*2.50* f
Handles, Pair	2.38	*1.70*	2.38	*1.70* f	2.38	*1.70* f

STEEL BEAM—PONY SERIES



All Furnished with Extra Point

	No.	Cut	Horse	Weight	Each	List
	Pony	7"	1 (Light)	48 lbs.	$14.70	*$10.50*
f	A-0	8"	1 (Regular)	50 lbs.	17.50	*12.50*
f	B-0	9"	2 (Light)	60 lbs.	18.90	*13.50*
f	C-0	10"	2 (Regular)	79 lbs.	21.00	*15.00*

Designed for sandy and mixed soils. Has open hearth steel point, landside and moldboard, polished steel frog and slip heel, channel steel beam and varnished hardwood handles.

EXTRA PARTS FOR STEEL BEAM

For Plow	Pony		A-0		B-0	
	Each	List	Each	List	Each	List
Steel Point	$1.12	*$ .80*	$1.54	*$1.10* f	$1.75	*$1.25* f
Cast Point	.70	*.50*	----	----	----	----
Steel Mold	2.38	*1.70*	3.08	*2.20* f	3.50	*2.50* f
Outside Land	.70	*.50*	.77	*.55* f	.77	*.55* f
Inside Land	.70	*.50*	.70	*.50* f	.70	*.50* f
Slip Heel	.21	*.15* f	.21	*.15* f	.21	*.15* f
Steel Beam	6.30	*4.50* f	6.30	*4.50* f	6.30	*4.50* f
Handles, Pair	2.38	*1.70*	2.38	*1.70* f	2.38	*1.70* f

For Plow	C-0		For Plow	C-0	
	Each	List		Each	List
Steel Point	$1.96	*$1.40* f	Inside Land	$ .56	*$ .70* f
Cast Point	----	----	Slip Heel	.28	*.20* f
Steel Mold	4.69	*3.35* f	Steel Beam	7.70	*5.50* f
Outside Land	1.19	*.85* f	Handles, Pair	2.80	*2.00* f

Plow Bolts used on "Pony" Plows. For Landside and Point—No. 3 Bolt, ⅜x1¼". For Moldboard and Point—No. 3 Bolt ⅜x1".

(f)—Factory Only.

CAST PLOWS

BOY CARBON PATTERN

No.	Cuts	Weight	Each	List
Boy Carbon	7"	40 lbs.	$7.35	$9.25

The Boy Carbon Plow is a counterpart of the Boy Dixie in pattern and size, all parts interchanging, Handles and Beams painted red; bottoms, polished and blued Otherwise same as Boy Dixie. Uses No. 4 Plow Bolt ⅜x1¼" on mold, land and point

EXTRA PARTS

		List
Points, 25 lbs., per doz., Per Cwt.	$10.85	$7.75
Moldboard, Per Cwt.	10.85	7.75
Landsides, Per Cwt.	10.85	7.75
Wood Beams, Less Clevis, Each	1.26	.90
Handles, Less Brace, Per Pair	1.68	1.20
Standards, Per Cwt.	12.00	8.00

BOY DIXIE PATTERN

No.	Cuts	Weight	Each	List
Boy Dixie	7"	40 lbs.	$7.00	$5.00

Designed for light breaking and cultivating. They are used in every southern state. The materials are of good quality and Plows are well fitted. All parts interchangeable with the Boy Carbon Plow. Stock and bottoms natural finish. Uses No. 4 Plow Bolt ⅜x1¼" on mold, land and point.

EXTRA PARTS

		List
Points, 25 lbs., per doz., Per Cwt.	$10.50	$7.50
Moldboard, Per Cwt.	10.50	7.50
Landsides, Per Cwt.	10.50	7.5
Wood Beam, Clevis, Each	1.05	.75
Handles, Less Braces, Per Pair	1.54	1.10
Standard, Per Cwt.	10.50	7.50

LYNCHBURG CHILLED BOY DIXIE PATTERN REPAIRS

Parts	Points	Lands	Molds	Standards
Per Cwt.	$10.00	$10.00 f	$10.00 f	$11.00 f

MISCELLANEOUS PLOWS AND REPAIRS

STEEL PLOWS

No.	Weight	Each	List
f Little Giant	39 lbs.		$7.25 f

LITTLE GIANT STEEL REPAIRS

All F.O.B. Factory

Each	$1.05	$ .91	$1.54	$2.59	$1.89 Pr.	$1.54
List	.75	.65	1.10	1.85	1.35 Pr.	1.10

BRINLY STEEL REPAIRS ONLY

Each	$ .98	$ .84 f	$2.10 f
List	.70	.60 f	1.50 f

CAST PLOWS

No.	Weight	Each	List
f—Louisville No. 8	38 lbs.	$10.50	$7.50 f

LOUISVILLE No. 8 REPAIRS

Point	Land	Mold	Std.	Hdls.
Each	Each	Each	Each	Pair
$ .56	$ .56 f	$ .56 f	$3.57 f	$1.96 f
.40	.40 f	.40 f	2.55 f	1.40 f

JARRELL PLOWS

No.	Weight	Each	List
f—Jarrell No. 1	38 lbs.	$10.50	$7.50 f

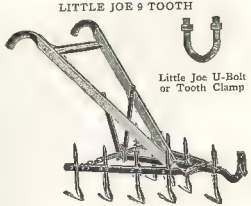
JARRELL REPAIRS

Point	Land	Mold	Std.	Hdls.	Beam
Each	Each	Each	Each	Pair	Each
$ .56	$ .63 f	$ .56 f	$3.57 f	$1.96 f	$1.96 f
.40	.45 f	.40 f	2.55 f	1.40 f	1.40 f

(f)—F.O.B. Factory

HARROWS

LITTLE JOE 9 TOOTH



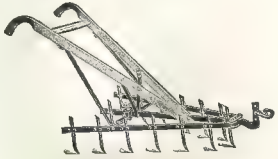
No.	Weight	Each	List
Little Joe	38 lbs.	$10.50	$7.50

Side rails are U-shaped, and both center rail and side, as well as teeth are made of hard steel so as to be stiff Have steel cross-heads and expansion braces. Teeth may be set at different angles, and the Harrow adjusted to any width desired.

EXTRA PARTS

		List
Teeth, Each	$ .35	$ .25
U Bolts, Each	.11	.08
Expansion Bar Clamp	.35	.25
Handles, Per Pair	1.68	1.20
f Expansion Braces, Per Pair	.56	.40
f Handle Braces, Per Pair	.56	.40

14 TOOTH ORCHARD HARROWS



No.	Weight	Each	List
Orchard—With Lever	62 lbs.	$14.14	$10.10
Orchard—Plain	52 lbs.	11.90	8.50

Orchard Harrows are light, but very strongly constructed of best materials. Adjustable to any desired width. Handles are double braced. Teeth are made of hard steel, diamond shaped, forged to a neat duck-bill on one end, adjustable to various angles. They are unexcelled in workmanship and finish.

PARTS FOR ORCHARD HARROWS

		List
Teeth, Each	$ .21	$ .15
Wedge or Tooth Sets, Each	.07	.05
f Handles, Pair	1.75	1.25
f Expansion Clamp, Each	.32	.23
f U Bolt, Each	.11	.08
f Expansion Braces, Pair	.56	.40
f Lever Ratchet or Quardrent, Each	.56	.40
f Outside Handle Braces, Each	.56	.40
f Short Handle Braces, Each	.30	.21

(f) -F.O.B. Factory

NUTONE ELECTRIC DOOR CHIMES

PENT HOUSE

No.	Finish	Each	List
J-26	Ivory	$7.08	$5.45

(Transformer not Included)

Two Tones Front Door, One for Rear

A beautiful low-cost chime, with unusually fine tone. Two notes for front door, one for rear. Ivory metal cover with genuine brass decoration. Operates on any good 10 volt transformer.

Size:—8" wide, 2⅞" deep, 40¾" overall. Shipping weight 4 lbs., 12 oz. 6 to carton.

CLASSIC "3"

No.	Finish	Each	List
J-30	Ivory	$9.68	$7.45
J-30	Walnut	9.68	7.45

(Transformer not Included)

Two Tones Front Door, One for Rear

Three tubes (center tube silent.) Two tones for front door, one for rear. Unbreakable plastic cover with rich cameo-like engraved design. Tarnish-proof brass tubes. Operates on 10-volt transformer on wiring now in the home

Size:—41" over-all. Cover 7¾" wide, 2⅝" deep. Shipping weight 5 lbs., 12 oz 6 to shipping carton

NOTRE DAME

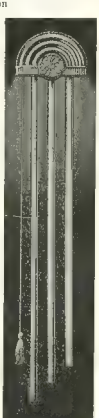
No.	Finish	Each	List
J-32	Ivory	$12.94	$9.95

Transformer and Night Light Included

Two Tone Front Door, One for Rear

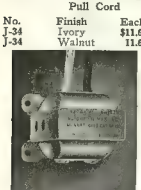
Handsome unbreakable plastic cover reproduces famous cathedral window. Tarnish-proof brass tubes. Two tones for front door, one for rear door. Center tube is silent, but greatly enchances appearance of chime. Equiped with night light which operates through transformer included with this chime. Gold tassel pull cord also included. Exceptionally attractive chime and night light at this low price.

Size:—41" high, 8½" wide, 2⅝" deep. Shipping weight 6 lbs., 10 oz. 4 to shipping carton.



Same Without Night Light and Pull Cord

No.	Finish	Each	List
J-34	Ivory	$11.64	$8.95
J-34	Walnut	11.64	8.95



TRANSFORMERS

No.	Each	List
TR-12-A	$1.62	$1.25
12 Volt Size		
TR-10-A	$1.30	$1.25
10-Volt Size		

For other Transformers see Page 4519

PEARL PUSH BUTTONS

No.	Each	List
PB-1	$ .46	$ .35

*J -EM

TRINITY "3"

With Night Light and Pull Cord

No.	Finish	Each	List
J-38	Ivory	$23.34	$17.95

Transformer Included

Three Tone Front Door, One for Rear

Three-tube cathedral chime, sounding three exquisite tones for front door, one for rear. Tarnish-proof brass tubes Transformer included. Ivory plastic cover with gold etched design in center panel.

Size:—9⅞" wide, 45" long, 4⅝" deep. Shipping weight 10 lbs., 14 oz. Two to carton.

Same Without Night Light and Cord

No.	Finish	Each	List
J-36	Ivory	$22.04	$16.95

TRINITY "4"

No.	Finish	Each	List
J-40	Ivory	$23.94	$19.95

Transformer Included

A 4-tube Westminister chime sounding four tones for front door and one for rear. Night light operates with gold tassel pull cord through NuTone transformer included with chime. Ivory unbreakable plastic cover with tarnish-proof brass tubes.

Size —9⅞" wide, 51" long, 4⅝" deep. Shipping weight 12 lbs., 2 oz. One to shipipng carton.

MAJESTIC "4"

With Night Light AND CORD

No.	Finish	Each	List
J-42	Ivory	$35.40	$29.50

Eight genuine Westminister tones for front door, plus different signals for side and rear doors. Ivory or Walnut unbreakable plastic cover. Tarnish-proof brass tubes of special chime alloy. Night light gives added beauty and illumination. Chime and light operate through transformer included with model.

Size:—9⅞" wide, 55⅞" long, 4⅝" deep. Shipping weight 15 lbs., 12 oz. One to shipping carton.

NUTONE ELECTRIC DOOR CHIMES

SPECIAL NOTE:—NuTone Chimes operate through 8-10 volt, also 12 volt and 20 volt bell ringing power transformers on 110 volt 60 cycle AC current only. They also operate on dry cell batteries. Do not attach any NuTone Chime to DC current

COMMANDER

No.	Finish	Each	List
J-18	Ivory	$6.44	$4.95

(Transformer not Included)

Two Tones for Front Door, One for Rear.

An ultra-smart new model packed in a special year-around gift box. Beautifully styled and streamlined. In unbreakable Antique Ivory Plastic with brass tubes and cover decoration. Sounds two musical tones for front door, one for rear door. Operates on 10-volt bell transformer on wiring now in the home. Designed for Entrance Hall, Living Room or Dining Room.

Size 6¾" wide, 7" high, 2⅛" deep. Weight 2 lbs. 4 oz. 6 to shipping carton

MT. VERNON

No.	Finish	Each	List
J-20	Brass	$7.74	$5.95

(Transformer not Included)

Two Tones for Front Door, One for Rear

NuTone's authentic Colonial hammered brass chime. Three-tube effect. Exclusive NuTone design, protected by U. S. Design Patent No. 124993. Sounds two tones for front door and one for rear door. Operates on 10-volt transformer. Satin brass tubes and shield cover are tarnish proof.

Size—11¾" high, 7" wide. 3¼" deep. Weight 3 lbs. each. 6 to carton.

WEATHERMAN CHIME

No.	Finish	Each	List
J-22	Ivory	$9.04	$6.95

(Transformer not Included)

Two Tones for Front Door, One for Rear.

Another NuTone exclusive! This s a combination of NuTone 2-door chime with a genuine guaranteed **Airguide** Thermometer and Humidity gauge. The **Airguide** is a home necessity—250,000 of this type weather instrument sold last year! The Weatherman chime is a "trail blazer"—watch the sales grow!

Ivory cover with brass finish tubes. **Airguide** instrument has large, clear dial showing accurate room temperature and humidity. We guarantee the mechanism! Interesting booklet on weather included with each model. Chime sounds two notes for front door, one note for rear, and operates on 10-volt transformer now in the home or on dry cell batteries. For new homes we recommned our NuTone B-10 A transformer

Size—8½" wide, 8⅝" high, 2⅛" deep. Weight 3¼ lbs 6 to shipping carton

TIME CHIME

No.	Finish	Each	List
J-24	Ivory	$14.24	$10.95

(Transformer not Included)

Two Tones for Front Door, One for Rear.

NuTone's ever popular 2-door Chime and Clock combination—completely redesigned! Choice of the most exclusive new home developers from coast to coast. Two tones for front door -one for rear door. Famous, self-starting Telechron electric clock and NuTone Door Chime. The clock tells the time—the chime acts as a 2-door signal. The clock mechanism can be removed from wall if repairs are necessary, leaving the chime mechanism itself in full operation.

Size 8½" wide, 8⅝" high, 3" deep. Weight 4 lbs. 14 oz. 3 to shipping carton

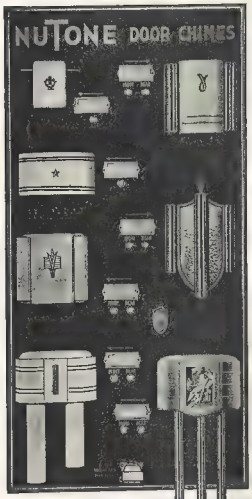
NUTONE ELECTRIC DOOR CHIMES

SPECIAL NOTE:—NuTone Chimes operate through 8-10 volt, also 12 volt and 20 volt bell ringing power transformers on 110 volt 60 cycle AC current only. They also operate on dry cell batteries. Do not attach any NuTone Chime to DC current.

Some Models do not Include a Transformer

WALL DISPLAY

A powerful selling display—in rich Burgundy Red with attractive gold lettering, complete with cord and plug.



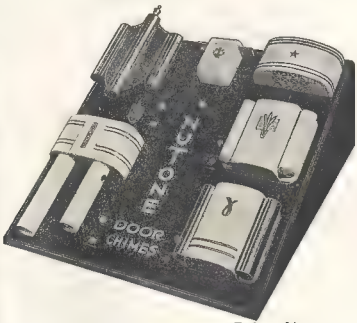
No.	Each	List
NWD	**$47.34**	*$35.40*

(Charge for Board Included)

Display Consists of Board and each of Following Chimes:—

No.	Description	List Each
J-10	Minuet	*$1.25*
J-12	Patriot	*1.25*
J-14	Greeter	*2.95*
J-16	Kitcheneer	*3.95*
J-18	Commander	*4.95*
J-20	Mt. Vernon	*5.95*
J-30	Classic	*7.45*
PB-2	Col. Door Button	*1.00*
J-20	(FREE)	*5.95*
	Total List	*$35.40*

The Mt. Vernon Model J-20 is given Free with this display to offset charge of *$6.00* for board.

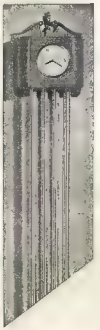


No.	Each	List
NCD	**$36.40**	*$26.95*

(Charge for Board Included)

No.	Description	List Each
J-10	Minuet	*$1.25*
J-12	Patriot	*1.95*
J-14	Greeter	*2.95*
J-16	Kitcheneer	*3.95*
J-18	Commander	*4.95*
J-20	Mt. Vernon	*5.95*
PB-2	Colonial Door Button.	*1.00*
J-18	(FREE)	*4.95*
	Total List	*$26.95*

The Commander Model J-18 is given Free to offset *$5.00* charge for board.



★J-1—EM

MONTECELLO CLOCK DISPLAY

No MCD **$57.94 Each**

(Charge for Board Included)

Display consists of Montecello Clock, Model J-46 on attractive display board. A Model J-18 Commander Model listing for $4.95 is given Free with this display

OPEN STOCK

No.	Each	List
J-46	**$47.94**	*$39.95*

Walnut Cabinet

Size:—10¼" wide, 55⅝" high, and 5⅜" deep. Weight 19 pounds.

Telechron self-starting clock, gold dial and minute hands, brush-brass bezel to harmonize with chime tubes. The great appeal of this model is its compact cabinet design. The clock tells time (does not chime the hour.) The chime sounds four tones for front door and one for rear. Clock operates on transformer included with chime.

NUTONE ELECTRIC DOOR CHIMES

SPECIAL NOTE:—NuTone Chimes operate through 8-10 volt, also 12 volt and 20 volt bell ringing power transformers on 110 volt 60 cycle AC current only. They also operate on dry batteries. Do not attach any NuTone Chime to DC current.

MINUET

No.	Finish	Each	List
J-10	White	$1.62	*$1.25*
J0-1	Ivory	1.62	*1.25*

(Transformer not Included)

A space-saving model! Sounds one rich note for one door. Gracefully designed. Operates on any good 10-volt transformer or dry cell batteries. Ivory or White baked enamel, with silver finish decoration. Size:—5¾" wide, 4⅛" high, 2" deep. Shipping weight 1 lb. 12 to shipping carton.

PATRIOT

No.	Finish	Each	List
J-12	White	$2.54	*$1.95*
J-12	Ivory	2.54	*1.95*

(Transformer not Included)

A compact 2-note NuTone Chime, especially designed for small or narrow spaces, suitable for any type of room. Sounds two harmonizing tones for one door. White or Ivory baked enamel, with bright metallic bands and star. Size:—4" high, 7⅛" wide, 3" deep. Weight 1 lb. 13 oz. 12 to shipping carton

GREETER

No.	Finish	Each	List
J-14	White	$3.84	*2.95*
J-14	Ivory	3.84	*2.95*

(Transformer not Included)

Two Tone Front Door, One for Rear

Here is the style and price leader in the entire chime industry! Magnificent tone—last word in modern chime designing—a tremendous value at $2.95. Entire model finished in baked enamel—White or Ivory with gleaming chromium decoration.

Size:—6⅜" wide, 6⅜" high, 2½" deep. Weight 2 lbs. 4 oz. 12 to shipping carton.

KITCHENEER

No.	Finish	Each	List
J-16	White	$5.14	*$3.25*
J-16	Ivory	5.14	*3.95*

(Transformer not Included)

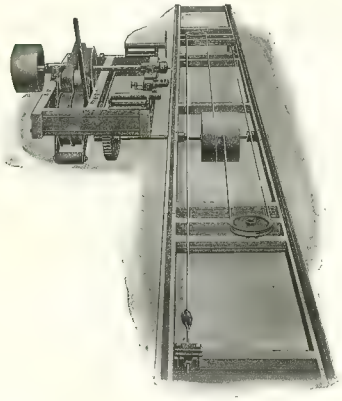
Two Tone Front Door, One for Rear

Most famous short-tube model in the country, designed by NuTone—the original creator of all short tube chimes. Ideal 2-door model for Kitchens and Breakfast Nooks. White or Ivory baked enamel cover and tubes, with chromium bands and panel decoration. New shield at bottom of cover protects mechanism from dust. Brilliant tone!

Size:—12⅞" high, 7⅜" wide, 2⅝" deep. Weight 2¾ lbs. 6 to shipping carton

AMERICAN SAW MILLS

WIRE CABLE CARRIAGE DRIVE



FOR VARIABLE BELT FEED SAW MILLS

The accompanying cut illustrates the simplicity of the Cable Drive for these Mills. Only one set of gears are used, the drum being carried direct by the main feed shaft.

Prices on Application

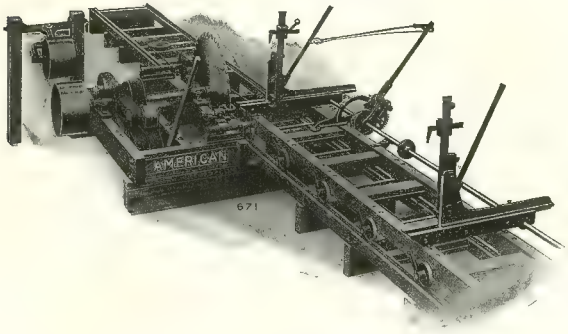
FEED BELTS

Size of Mill	No. 1	No. 2	No. 3	No. 4
Width of Belts	4″	4″	6″	6″
Length of Feed Belts	15′ 2″	17′ 10″	19′	19′
Length of Gig-back Belt	7′	9′ 10″	10′ 4″	10′ 4″

★ F—1— EO

AMERICAN SAW MILLS

HEACOCK VARIABLE BELT FEED MILLS



Prices on Application

No. 2, 3, 4

The No. 2 "Heacock" Variable Belt Feed Saw Mill is adapted for any power from 10 to 25 H. P. It is capable of cutting 5,000 feet of board lumber per day with a good 10 H. P. steam engine, or up to 10,000 feet per day with 20 H. P. Any saw up to 54" diameter may be used.

The No. 3 "Heacock" Variable Belt Feed Saw Mill is adapted for 15 to 30 H. P. It is capable of cutting 7,000 to 8,000 feet of board lumber per day with 15 horse steam power, or from 10,000 to 15,000 feet with 30 H. P. Saws up to 60" diameter may be used.

The No. 4 Variable Belt Feed Saw Mill is recommended as a heavy portable rig and is not surpassed in quality or performance. It is adapted to any power up to 40 H. P. and is capable of cutting up to 20,000 feet of board lumber per day. Saws up to 60" diameter may be used.

A complete mill consists of the following:

Husk Frame fitted with Variable Belt Feed and a set of special feed belts. Mandrel with forged steel collar, Mandrel Boxes of chain-oiling type and connected by heavy yoke, and Mandrel Pulley. Husk is fitted with board rolls, spreader wheel, and adjustable screw saw guide.

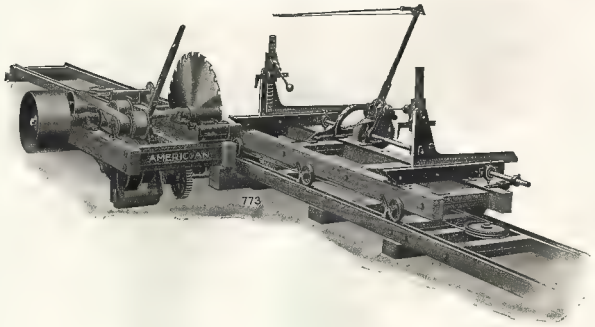
Carriage—Trucks, steel axles and self-oiling boxes; track and ways framed together in sections; headblocks fitted with dogs; "Ideal" set works with quick receder; polished steel set shaft; also belt tightener, foundation bolts, cant hook, oil can, wrenches and feed belts. Saw is extra, according to size and style selected.

American Saw Mills can be furnished in larger sizes and types to meet any requirements. The complete line can not be shown as space will not permit.

Complete specifications and catalogue furnished on request.

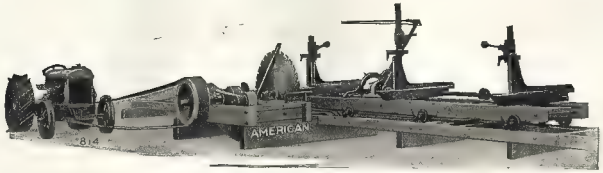
AMERICAN SAW MILLS

HEACOCK VARIABLE BELT FEED MILL



No. 1

The above cut represents out No. 1 American Heacock Variable Belt Feed Saw Mill. It is a light weight yet sturdy mill and cuts from 2,000 to 6,000 feet timber per day, depending upon power available. It is recommended for use with any power from 10 to 20 H. P.

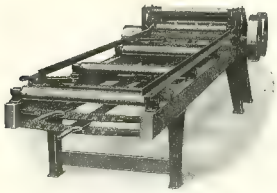


Prices on Application

No. 1 Fitted For Tractor Power

This cut represents the No 1 American Heacock Variable Belt Feed Saw Mill fitted with balance wheel pulley for tractor drive.

TOWER EDGERS



Without Press Roll and Frame

For portable and small stationary mills having from 15 H. P. and over and cutting from 5,000 to 20,000 feet per 24 hours

Cut at left shows front table and feed pulley side; rear table and front press roll are not shown.

These edgers are adapted for edging and ripping hard and soft woods as thick as 3 inches at a rate of 100 linear feet per minute.

SPECIFICATIONS 30" TOWER EDGER

Width in the clear, and, therefore, widest board edger will receive, 30". Greatest distance that can be produced between adjacent saws: Nos. 301 and 302, 28"; No. 304, 20". Size of saws, 14" by 10 ga. Thickest stock for which edger is designed, 3". Rate of feed (with edger running 2000 R. P. M.), 100 linear feet per minute. Shipping weight: Without front press roll, 1500 lbs.; with front press roll, 1585 lbs. Size of arbor pulley, 10" diameter by 8" face. Speed, 1700 to 2000 R. P. M. Length over all when assembled and ready for operation, 22 ft. 7 in. Greatest width over all (over saw arbor), 54". Diameter of arbor, 1 15/16".

SPECIFICATIONS 32" TOWER EDGER

Width in the clear, and, therefore, widest board edger will receive, 32". Greatest distance that can be produced between adjacent saws: Nos. 1 and 2, 24"; No. 4, 21¾". Size of saws, 14" by 10 gauge. Thickest stock for which edger is ordinarily employed (at a minimum feed of 125 linear feet per minute), 3". Shipping weight: Without front press roll, 1660 lbs.; with front press roll, 1750 lbs. Size of arbor pulley, 10" diameter by 8" face. Speed, 1700 to 2000 revolutions per minute. Length over all when assembled and ready for operation, 23 feet 0 inches. Greatest width over all (over saw arbor), 5 feet 6 inches. Diameter of arbor, 1 15/16".

30" TOWER EDGER

	Without Saws	With Solid Tooth Saws	With Inserted Tooth Saws
No. 301—2 14" saws—1 stationary and 1 movable	$147.78	$160.00	$192.18
No. 302—2 14" saws—Both movable	163.78	176.00	208.18
No. 304—3 14" saws—1 stationary and 2 movable	173.67	192.00	240.27

32" TOWER EDGER

No. 1—2 14" saws—1 stationary, 1 movable	$167.78	$180.00	$212.18
No. 2—2 14" saws—Both movable	182.78	195.00	227.18
No. 4—3 14" saws—1 stationary and 2 movable	191.67	210.00	258.27
Extra for front press roll and frame—30" Edger			$23.71
Extra for front press roll and frame—32" Edger			25.60

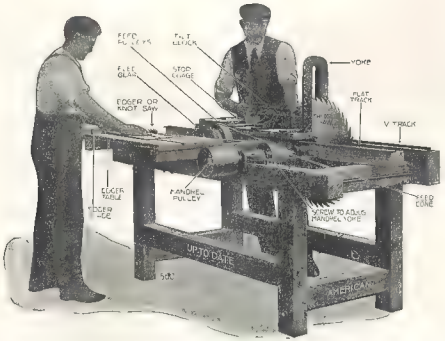
These edgers can be furnished in sizes up to 80". Specifications and complete information upon request.

IMPORTANT

In ordering do not fail to state whether solid or inserted tooth saws are wanted. Also advise if pulley is to be on right or left hand side of Edger when standing in front facing it.

AMERICAN SHINGLE MACHINES

UP-TO-DATE



With Power Feed, Automatic Stop, Edger and Knot Saw

To meet the demand for a reliable yet low priced "Shingle Machine," suitable for small mills, farmers and others having light power, we offer the "Up-To-Date" Shingle Machine shown above. It will make shingles, heading, box boards, crate slats, etc.

The thickness of shingle is regulated by an adjustable tilting device, which can also be adjusted for cutting box boards, etc., and may be removed entirely for bolting or squaring shingle blocks. No separate shingle block bolter is required. Shingles drop out underneath as they are cut.

Power Feed is provided, which is thrown into gear by pressure of the foot on the treadle, and a trip is provided which automatically disengages the power feed at any desired point. The machine can be used either with hand or power feed.

An Edger and knot saw is provided which has an 8-inch saw and a convenient gauge, insuring square, straight-edge shingles.

The machine will handle square, round or split blocks up to 24 inches long. A 24-inch saw will cut shingles up to 7 inches wide. Furnished complete with 24-inch shingle saw, 8-inch edger saw and feed and edger belts.

30 or 36-inch saw for bolting the stock can be furnished, when desired, at additional cost. 5000 to 8000 shingles per day can easily be cut. This machine can be made to cut 36 inches long at slight extra charge It may be fitted with a 75 lb. balance wheel on mandrel, when desired, at extra cost

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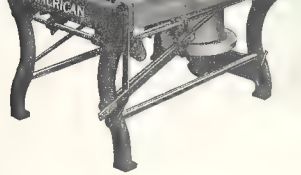


ROYAL

The "Royal" Shingle and Heading Machine is a very superior machine, being constructed throughout of the best grade of steel and iron, and of strictly first-class workmanship

The design insures great strength, rigidity and durability The frame consists of heavy cast iron front and back pieces securely bolted together by six heavy steel rods and two strong diagonal braces.

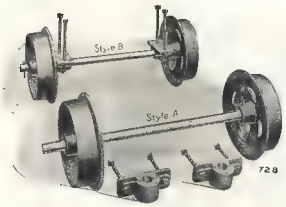
The Mandrel is steel and is fitted with large pulley and heavy balance wheel, which is carefully balanced.

The Carriage is light and strong, with roller bearings and adjustments for cutting any length of shingles, box boards or heading, from 16 to 24 inches. Saws from 36 to 42 inches may be used.

Capacity, 20,000 to 30,000 Per Day.

AMERICAN LOG AND LUMBER TRUCKS

Prices on Application



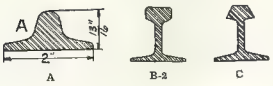
The Standard Lumber Trucks are made in five regular sizes with steel axles and are generally used in wood frames without boxes, but suitable boxes or stirrups can be furnished when wanted, at extra cost. All are 2½" gauge and 3¼" tread. Wider gauge furnished at extra cost.

The Log Trucks are of similar patterns but heavier and may have clamp boxes and stirrups, or babbitted boxes with oil cellars.

A set consists of four wheels and two axles. Stirrups are furnished with style "B." Style "A" shipped without boxes unless boxes are specified.

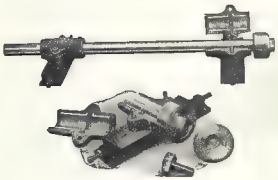
CARRIAGE TRUCKS

The Carriage Trucks are made in eight regular sizes with polished steel axles. Boxes have large oil and waste pockets.



ROLLED STEEL CARRIAGE TRACK

The cuts show the style or shape of the Rolled Steel Guide Track, which we furnish with our different size mills. The cuts are about one-fourth actual size, but the measurements are correct. Style A is furnished with Nos. 1, 2 and 3 carriages, style B 2 with No. 4, and style C with Nos. 6, 6½, 7½ and 8. Style C is planed to fit truck wheels. Weight per yards, lbs.: A, 8 lbs.; B-2, 12 lbs.; C, 16, 20 and 40 lbs.



SAW MILL MANDRELS AND BOXES

Showing Chain Oiling Box and Method of Fitting Nut and Lug Pins

The Standard Saw Mill Mandrels are made of the best grade steel, turned and ground perfectly true, with solid steel collars, fitted for saws with 2" hole, and two ⅝" pin holes on 3" circle.

COLEMAN LANTERNS AND LAMPS

Supply the light for every outdoor need at night. High Candle Power, Clear, steady-shining brilliance for any lighting job outdoors or indoors. Lanterns are not affected by wind, rain or storm. Low cost of operation. They make and burn their own gas from any grade of any clean gasoline **FREE OF ANTI-KNOCK COMPOUND** (Clear Gasoline.) Burns 4% gas to 96% air. Gives more than 40 hours of dependable lighting service per gallon of fuel.

LANTERNS
GASOLINE PRESSURE

Instant Lighting—Two Mantles

No.	Weight	Each	List
220	5½ lbs.	**$10.60**	*$7.95*

A fine powerful Lantern that is always ready for every out door need, regardless of weather. Two Mantles, high candle powed air pressure light.

T44G, Generator, over size, gives longer service with fewer changes. No. 330 Pyrex Glass Globes protect Mantles. Ventilated top, green porcelain enamel, 6¾" diameter. Fount nickel plated, two pints fuel capacity, enough for 10 to 12 hours lighting service, 6" diameter. Built-in pump, hand operated filler plug. Over-all height 14½". One in carton complete with two Coleman double strength Silk-Lite Mantles and wrenches.

GASOLINE PRESSURE

Instant Lighting—Two Mantles

No.	Weight	Each	List
228	6 lbs.	**$11.20**	*$8.45*

Same as No. 220 but has larger ventilator top. Green porcelain enamel, 8¾" diameter, under side white enamel to throw light downward. T44G Generator. One in carton complete with two Coleman double strength Silk-Lite Mantles and wrenches. No. 330 genuine Pyrex Glass Globe.

LANTERNS
GASOLINE PRESSURE

Instant Lighting—Single Mantles

No.	Weight	Each	List
242	4 lbs.	**$8.30**	*$5.95*

Single Mantle produces a fine high candle power light. T66, Generator, over size gives long and dependable service. No. 550 Pyrex Globe bulge type, protects mantle. Ventilator top green porcelain enamel, 5½" diameter. Fount nickel plated, 1½ pint fuel capacity, enough for 7 to 9 hours lighting service, 5" diameter. Built-in pump, hand operated filler plug. Over-all height 12½". One in a carton complete with one Coleman Silk-Lite Mantle.

LAMPS
GASOLINE PRESSURE TYPE

Instant Lighting—Two Mantles

No.	Weight	Each	List
132	10 lbs.	**$13.20**	*$9.75*

Just the Lamp for those who want something extra in appearance. High quality, 15", decorated, fluted shade with silk corn light. Inner Pyrex glass No. 355 globe protects the mantles. Embossed fuel fount has built in pump and is attractively finished in ivory enamel with a gold trim. Equipped with long-service No. T44G Generator. Fuel capacity of fount, 3 pints sufficient for 15 to 18 hours of abundant eye-saving light. Over-all height of lamp, 19½". Packed 1 to carton.

LAMPS
GASOLINE PRESSURE TYPE

Instant Lighting—Two Mantles

No.	Weight	Each	List
134	5 lbs.	**$8.00**	*$5.95*

A low priced Coleman Lamp that will give long, dependable service. Its two mantles provide high candlepower, for which Coleman Lamps are famous. Mantles are protected by a mica chimney. Uses T44G Generator. It has colored, fluted parchment shade. Fuel fount is finished in ivory enamel. Capacity two pints, giving 10 to 12 hours of lighting service. Over-all height of lamp, 19". Packed 1 to a carton.

GASOLINE OR KEROSENE PRESSURE

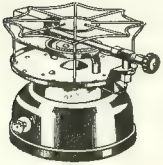
Two Mantles

No.	Weight	Each	List
139	8 lbs.	**$10.60**	*$7.95*

New Dual-Fuel Lamp burns either gasoline or kerosene. Instant lighting when gasoline is used as fuel. Uses No. T-44G Generator with gasoline or when kerosene is used only occasionally; No. T-44K Generator should be used when kerosene is used regularly. Has fluted decorated shade. Fuel fount finished in ivery with gold trim. Capacity two pints, enough for 10 to 12 hours. Mantles protected by No. 355 Pyrex globe. Over-all height 19½". Packed 1 to carton.

COLEMAN CAMP STOVES

ONE BURNER—Table Model



No.	Weight	Each	List
500	5¼ lbs	$8.30	$5.95

Its low price, many uses and speedy, economical operation makes this a popular one-burner stove. It lights instantly and regulates to any degree of heat you want. It has a wind proof, quiet, odorless, burner with all the well-known Coleman safety features. Boils a pint of water in 2¼ minutes. Produces more than 7,500 B.T.U.'s per hour. Long lasting No. 500 289 generator which is easily cleaned. Built-in pump, positive shut-off valve. Rust-resisting fuel fount, two pint capacity. Over-all size; height 7"; width, 10½" Packed one to carton.

TWO BURNER—Instant Lighting

No.	Weight	Each	List
417	14 lbs.	$8.10	$5.50

A popular low priced dandy stove for picnics, week-end jaunts, touring, fishing hunting and camping. Lights instantly just like gas—cooks like gas. Wind proof burners; steel fuel tank, finished in black enamel, 2 pint capacity, quickly removed for filling. Built-in pump. Uses No. 412-262 generator. Body finished in olive green; steel wire legs. Size, 17⅝x12x4¾". Packed one to carton.

TWO BURNER—Instant Lighting

No.	Weight	Each	List
391	17 lbs.	$14.70	$10.95

Cabin and Trailer Stove ideal for many purposes. Heavy cast iron burners, extra long life. Cooking top of heavy stamped steel grates. Fuel tank of rust-resisting solodur metal, 4 pint capacity. Hinged top and grates finished in black baked-on enamel; body in ivory baked-on enamel. Uses No. 391-660 generator. Size 19¾x12½". Height over-all 7¼". Packed 1 to a carton.

TWO BURNER—Instant Lighting

Without Oven

No.	Weight	Each	List
415	17 lbs.	$10.80	$7.75

Big Hi-Power wind-proof burners light instantly. Heat instantly regulated for fast or slow cooking. Rust proof Solodur metal fuel tank easily removed for filling, holds 2½ pints Built-in pump, hand operated filler plug. Uses No. 413-262 generator. Green strap steel legs. Burner box made of heavy gauge sheet steel finished in forest green baked enamel. Tank has bronze lacquer finish. Size 18¾x12½x5". Packed 1 to shipping carton.

HIGH STAND FOR COLEMAN CAMP STOVES

(Stand Does not Include Stove as Shown Above)

No.	Weight	Each	List
10	8 lbs.	$3.00	$2.25

Fits all Coleman Camp Stoves and most other makes. Single unit, all-steel construction; folding joints lock automatically and make rigid frame and supports. Folds to size 2½x2x26¼". Packed 1 to carton.

OIL HEATER

No.	Weight	Each	List
444	56 lbs.	$53.30	$39.95

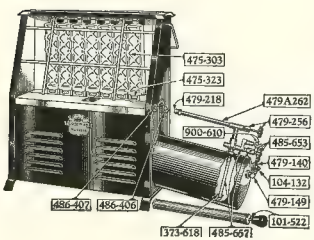
Just the thing for use in homes, offices, cabins, cottages, work shops, etc Delivers a two-way heating service—it radiates heat and circulates heat. The burner can be turned so low that it will burn as little as ½ pint of fuel per hour; it can be turned up high with a maximum heat output of 27,500 B.T.U.'s per hour.

High efficiency Coleman Burner equipped with low-flame fuel saver which permits low flame adjustment, prevents heat waste, giving a lower operating cost. Fuel control valve automatically maintains a constant, even flow of fuel. Three gallon capacity fuel tank with brown baked enamel finish. New attractive cabinet design with open grille work. Finished in walnut brown Duro-plastic enamel. Over-all size; 16", depth 20", height 34½". Packed 1 to a crate

COLEMAN RADIANT HEATER REPAIRS

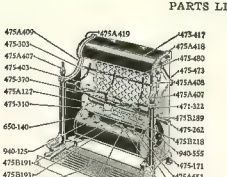
STANDARD FACTORY LIST PRICE
F.O.B. FACTORY

PARTS LIST FOR HEATER No. 16



Part No.		List Each
101 - 522	—Pump	$ .81
104 - 132	—Air Stem	.21
118B136	—Filler Plug Gasket	.06
216 - 509	—Pump Leather	.09
220B140	—Filler Plug Complete	.54
373 - 618	—Fuel Tip (Marked "AD")	.12
475 - 303	—Radiant	.35
475 - 323	—Main Burner Cap (⅞")	.09
479 - 149	—Air Valve Complete	.46
479 - 218	—Generator Gas Tip (Marked "W")	.15
479 - 308	—Drain Cap	.09
485 - 653	—Instant-Gas Valve Stem Complete	.46
485 - 657	—Instant-Gas Valve Complete	1.95
486 - 191	—Tank and Fittings (Less Generator)	8.25
486 - 193	—Tank, Valve and Generator Assembled	9.90
486 - 253	—Generator Valve Stem Complete	.48
486 - 262	—Generator Complete (Gas Tip Marked "W")	2.10
486 - 310	—Sub-flame Burner Casting	.46
486 - 370	—Burner Manifold (With Main Burner Caps)	3.00
486 - 406	—Valve Catch	.12
486 - 407	—Valve Latch	.12
900 - 610	—Instant-Gas Valve Safety Lock	.12

PARTS LIST FOR HEATER No. 5B



Part No.		List Each
471 - 322	—Sub flame Burner Cap (⅝")	$ .09
472 - 436	—Top Tie Rod Nut	.06
474 - 218	—Gas Tip (Marked "4H")	.15
474 - 509	—Pump Leather	.09
475 - 171	—Fuel Tube (3⅛" Long)	.33
475 - 262	—Thermo-Safety Generator (Gas Tip Marked "4H")	3.75
475 - 303	—Radiant	.35
475 - 310	—Preheater Pan	.41
475 - 323	—Main Burner Cap (⅞")	.09
475 - 370	—Burner Manifold (With Main and Sub-flame Caps)	3.30

★H -15—EO

Part No.		List Each
475 - 403	—Radiant Back (Aluminum)	$1.65
475 - 415	—Door Trim	.66
475 - 417	—Top (Porcelain)	1.65
475 - 473	—Bail	.33
475 - 480	—Guard	1.20
475B357	—Preheater Tank Valve Complete (Fuel Tip Marked "E")	.99
475A404	—Foot (Right)	.81
475A405	—Foot (Left)	.81
475A407	—Post Top	.33
475A408	—Frame Trim (Right)	.39
475A409	—Frame Trim (Left)	.39
475A418	—Top Trim (Right)	.39
475A419	—Top Trim (Left)	.39
475A648	—Indicator Handle and Screw	.18
475A653	—Valve Stem (Less Indicator Handle and Screws)	.33
475A657	—Tank Fuel Valve Complete	.99
457B171	—Preheater Fuel Tube (5½" Long)	.33
475B191	—Tank Complete (With Fittings)	10.80
475B193	—Tank, Drip Pan and Generator Complete Assembled	14.85
475B218	—Preheater Gas Tip (Marked "S")	.09
475B289	—Preheater Generator (Rotary Type) Gas Tip	.55
605 - 950	—Wrench	.18
650 - 136	—Filler Plug Gasket	.09
650 - 140	—Filler Plug Complete	.81
940 - 125	—Combination Fuel and Air Gauge	1.80
940 - 532	—Air Stem	.48
940 - 535	—Check Valve	.48
940 - 555	—Pump Plunger Complete (Less Air Stem)	1.35

COLEMAN HEATERS

GASOLINE PRESSURE TYPE RADIANT

No.	Weight	Each	List
5	42 lbs.	$39.90	$59.95

Heat resisting, non tarnishing, frame and body finished in rich bronze brown, top is of brown porcelain enamel, fluted door, decorated dress guards, column ornaments, andiron feet, aluminum heat deflector. Equipped with No. 475-262 rotary generator with automatic tip cleaner, "Everdur" metal fuel tank, rust and corrosion proof, prevents leaks, electrically welded, capacity one gallon, operates 7 to 12 hours, built-in pump combination air and fuel gauge, fuel control valve, and combination drip pan and baffle-plate, easily removable. Thermo safety generator automatically controls fuel flow, prevents flooding. Made of seamless brass tubing, improved burner gray cast iron, hard clay gas tips, 8 single radiants. Height 23", width 25", depth 13¾". Listed as standard by Underwriters' Laboratories. Packed one to a carton.

GASOLINE PRESSURE TYPE RADIANT

No.	Weight	Each	List
16	24 lbs.	$23.90	$37.95

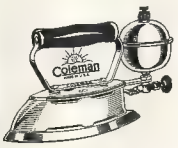
Nickel plated steel dress guards, polished aluminum heat deflector, frame and body finished in rich bronze-brown baked enamel, top of brown porcelain enamel, heat-resisting and non-tarnishing. "Everdur" metal fuel tank, rust and corrosion proof, prevents leaks, electrically welded, easily removable capacity 7 pints, operates 6 to 19 hours on one filling, separate air pump, hand operated filler plug. Generator No. 486-262 made of seamless alloy tubing, prevents warping, cleaning needle automatically cleans gas tip each time valve is opened and closed, easily removed. Seven single radiants of best fire clay. Height 18½", width 17", depth 7½". Packed 1 to a carton.

COLEMAN IRONS

SELF-HEATING GASOLINE

No.	Each	List
609	$9.20	$6.95

New streamlined self-heating gasoline iron, double pointed chromium sole plate. Natural-grip Bakelite handle and built-in thumb rest. New air cooled hood keeps handle cool. Non-tarnishing finishes. Black vitreous enamel body, and chromium base and hood. Complete with stand, pump, wrench and fuel measuring can. Over-all dimensions 4½" wide, 10¾" long, 6½" high. Net weight filled 6½ lbs. Uses 604-299 generator. Packed complete 1 to a box, six boxes to a carton. Weight per carton 44 pounds.



No.	Each	List
4-A	$7.90	$5.95

Self heating iron with double pointed high nickel plated base. 16 square inches of ironing surface. Burner extends full length of the iron, heating the entire bottom with the point the hottest. Two piece ventilated lid helps keep handle cool. Perfectly balanced. Has nickel plated steel lid and handle frame. Blue enameled wooden handle and blue porcelain enameled body. Fount and valve on it constructed of brass. Fount capacity, ½ pint. Complete with stand, pump, wrench and measuring can. Over-all dimensions 4½" wide, 10¾" long, 6½" high. Net weight filled 6½ lbs. Uses 604-299 generator. Packed 1 to a box, six boxes to a carton. Wt. per carton 42 pounds

★B -15—EO

COLEMAN MANTLES

FOR LAMPS AND LANTERNS

No.	Doz.	List Each
21-A	$1.30	$ .10

Made of highest quality rayon fibre. New triple lock weave gives greater strength so each mantle will last longer. Correct size, and shape so all of mantles area comes in contact with flame to produce greatest incandescence. Packed in gross size counter display cartons. Weight per gross 1½ pounds.

No.	Doz.	List Each
31	$1.10	2 for 15c

The New Raytex Junior Mantle is a good quality mantle, made of rayon fibre. Has double construction: strong single weave of proper mesh, cross sewed across bottom, correct in size and shape. Packed in gross counter display containers Weight per gross 1¼ pounds

FILTER FUNNELS

No.	Dia.	Each	List
1	5 "	$1.80	$1.35
0	2½"	.64	.50

Removes dirt, water and other impurities from fuel. Solid copper, non-corrosive. Equiped with a fine brass wire strainer and special filtering fabric. Packed 6 to carton.

COLEMAN GENERATORS

No.	Each	List
500-289	$ .88	$ .65

Used in No. 500 Speed-Master Stove. Consists of generator tube, needle, coil and gas tip.

No.	Each	List
604-299	$ .78	$ .55

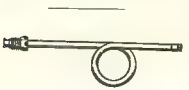
Used on 609 and 4-A Coleman gasoline iron. Has automatic cleaning needle, operated by a rotary lever which keeps gas tip clean and permits free flow of gas and insures better and longer service

R-55	$ .78	$ .55
No.	Each	List

Rotary Jumbo size insures long and dependable lighting service. Built-in rotary lever operates tip cleaning needle. Standard for Nos. 130G, 130F, 131P and 132P lamps and can be used on Nos. 117, 118, 119, 220,228 and all Quick-Lite lamps and lanterns Packed 1 doz. to carton. Weight 1 pound.

No.	Each	List
Q-77	$ .42	$ .30

Straight generator standard equipment for Instant-Lite lamps Nos. 117, 118, 119 and lanterns 220 and 228. Can also be used on all Match-Generating lamps and lanterns except Nos. 150B, 150G, 150I, 150R, 134P and 134G. A popular priced generator especially useful where low-grade fuels make frequent replacement necessary. Packed 1 doz. to carton. Weight ½ pound.



No.	Each	List
Q-99	$ .58	$ .40

Coil Generator is standard equipment on all models of Match-Generator lamps and lanterns except Nos. 130G, 130F, 131P, 134P, 134G, 150B, 150G, 150I and 150R. Packed 1 doz. to carton. Weight 1 pound.

No.	Each	List
T-44-G	$ .72	$ .50

Equipped with gas tip cleaning needle operated by a rotary lever which is built in the burner. Fits Coleman gasoline lamps Nos. 117A, 118A, 119A, 133, 134P, 134G, 132A, 143, 150B, 150C, 150I, 150R and Instant-Lite lanterns Nos. 220B and 228B. Packed 1 doz to carton. Weight ½ pound

No.	Each	List
T-44-K	$ .72	$ .50

Has same general construction as Generator No. T-44-G except made for kerosene lamps model Nos. 129, 129G, 150BK, 150GK, 150IK and 150RK, and kerosene lantern No. 235. Packed 1 doz. to carton. Weight ½ pound.

No.	Each	List
T-66	$ .72	$ .50

Has similar appearance of No T44G and has automatic cleaning needle operated by rotary lever. Roto-Cleaning generator for use only on No 242, 242A and 243 Coleman Instant-Lite lanterns and kerosene lantern No. 234. Packed 1 doz. to carton. Weight ½ lb

PRESSURE PUMP

No.	Each	List
101-522	$1.00	$ .75

For use with all lamps and lanterns without built-in pumps. Open stock.

COLEMAN GLOBES

PYREX GLASS GLOBES

An Exclusive Coleman Feature

No.	Each	List
330	$1.40	$1.00

Pyrex heat resisting clear glass globe. For use on gasoline lanterns No. 220B and 228B, and kerosene lantern No. 235. Height 5¼", diameter 4⅞". Packed 6 in a carton, shipping weight 4½ pounds.

No.	Each	List
355	$1.26	$ .90

Pyrex heat-resisting clear glass globe. For use on all 1935 and later model lamps using glass globes. Top opening 3", bottom opening 3⅜". Packed 6 in a carton, shipping weight 5 lbs.

No.	Each	List
550	$1.00	$ .75

Pyrex brand globe, (bulge type). For use on lanterns Nos. 242, 242A, 242B, 243, 243A and 234. Height 4⅜", diameter at top and bottom 3½". Packed 6 in a carton, shipping weight 3 lbs.

MICA GLOBES

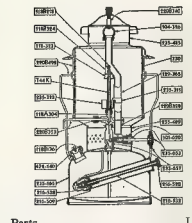
No.	Each	List
327	$ .90	$ .65

A 13 piece mica globe for use on Coleman lanterns. 5⅜" high by 4⅛" diameter. Packed 12 to carton, shipping weight 2 pounds

COLEMAN GASOLINE MANTLE LANTERN REPAIR PARTS

STANDARD FACTORY LIST PRICE
F.O.B. FACTORY

For No. 220, 220B, 228 and 228B

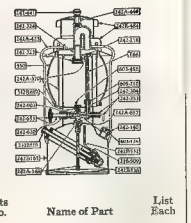


Parts No.	Name of Part	List Each
	T44G—Generator and Gas Tip Cleaning Needle (Less Jamb Nut) (Gas Tip Marked "V")	$ .50
	330—Pyrex Glass Globe	1.00
†228	**B498**—Frame and Bail	.99
	605 - 210—Jamb Nut	.03
	605 - 950—Wrench	.18
	104 - 326—Mixing Chamber	.54
	112 - 323—Burner Cap and Screens	.18
	118B118—Fuel Tip (Marked "AB")	.09
	118B136—Filler Plug Gasket	.03
	118B138—Fuel Tip Cleaning Needle	.18
	118B148—Fuel and Air Wire Complete (Fuel Tip Marked "AB")	.81
	118B218—Gas Tip (Marked "V")	.09
	118B322—Air Intake Tube	.39
	118B324—Burner Tube	.21
	118B620—Valve Stem Packing	.03
	203 - 441—Ventilator Ball Nut	.12
	216 - 508—Pump Leather	.06
	216 - 520—Pump Plunger Complete (Less Air Stem)	.66
	216 - 532—Air Stem	.21
	216 - 538—Check Valve	.21
	220B140—Filler Plug Complete	.54
	220B165—Fount Complete	4.95
	220B304—Eccentric Block	.09
	220B328—Air Intake Tube Extension	.12
	220B340—Ventilator Rod	.12
	220B353—Tip Cleaner Stem (Packed)	.33
	220B357—Gas Tip Cleaner Complete, Assembled	.81
	220B423—Bail	.18
	220B429—Globe Base Rest	.21
*	**220B485**—Ventilator (Porcelain 6¾" Base)	1.65
*	**220B498**—Frame and Bail	.99
	220B652—Valve Stem Complete	.66
	220B657—Fuel Valve Complete	1.95
	220B950—Wrench (Small)	.18
†227 - 486	—Ventilator (Porcelain 8¾" Base)	2.10

*For Lantern Model No. 220B.

†For Lantern Model No. 228B.

For No. 242 and 242B

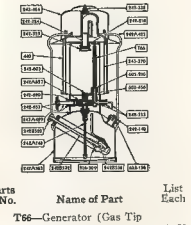


Parts No.	Name of Part	List Each
	T66—Generator (Gas Tip Marked "0")	$ .50
	550—Pyrex Glass Globe	.75
†216 - 509	—Pump Leather	.06
*223 - 538	—Pump Check Valve	.33
242 - 140	—Filler Plug Complete	.33
*242 - 165	—Fount Complete	4.05
242 - 218	—Gas Tip (Marked "6")	.09
242 - 304	—Tip Cleaner Eccentric Block	.09
242 - 323	—Burner Cap and Screen	.33
242 - 324	—Burner Tube	.18
242 - 353	—Tip Cleaner Stem Complete	.33
242 - 441	—Ventilator Ball Nut	.09
*242 - 518	—Pump Leather Assembly	.18
*242 - 520	—Pump Plunger Complete	.48
242 - 603	—Frame to Valve Connecting Stud	.09
242 - 620	—Valve Stem Packing	.03
242 - 653	—Valve Stem Complete	.33
242A148	—Fuel and Air Wire Complete (Fuel Tip Marked "L")	.39
242A370	—Frame and Burner Complete	1.65
242A423	—Bail	.21
242A440	—Ventilator Rod	.12
*242A489	—Globe Base Rest	.18
242A657	—Fuel Valve Complete	1.35
†242B165	—Fount Complete	4.05
†242B526	—Pump Plunger Complete (Less Air Stem)	.48
†242B532	—Pump Air Stem	.21
†242B538	—Pump Check Valve	.21
242X484	—Ventilator	.81
†242B489	—Globe Base Rest	.18
603 - 136	—Filler Plug Gasket	.03
605 - 210	—Jamb Nut	.03

*For No. 242

†For No. 242B.

For Nos. 243 and 243A

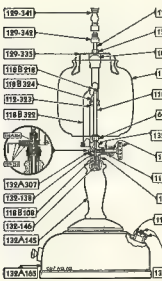


Parts No.	Name of Part	List Each
	T66—Generator (Gas Tip Marked "6")	$ .50
	449—Mica Globe	.50
216 - 509	—Pump Leather	.06
242 - 140	—Filler Plug Complete	.33
242 - 218	—Gas Tip (Marked "6")	.09
242 - 323	—Burner Cap and Screen	.33
242 - 324	—Burner Tube	.18
242 - 353	—Tip Cleaner Stem Complete	.18
242 - 603	—Frame to Valve Connection Stud	.09
242 - 620	—Valve Stem Packing	.03
242 - 653	—Valve Stem Complete	.33
242A148	—Fuel and Air Wire Complete (Fuel Tip Marked "L")	.39
242A423	—Bail	.21
242A657	—Valve Complete	1.35
242B520	—Pump Plunger Complete (Less Air Stem)	.48
242B532	—Air Stem	.21
242B538	—Check Valve	.21
243 - 370	—Burner Complete	1.65
243 - 484	—Ventilator	.81
243A165	—Fount Complete	2.70
243A489	—Globe Base Rest	.21
603 - 136	—Filler Plug Gasket	.03
605 - 210	—Jamb Nut	.03

COLEMAN LAMP REPAIRS

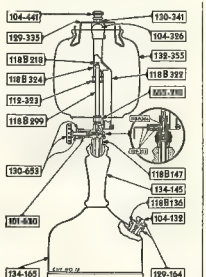
STANDARD FACTORY LIST PRICE
ALL F.O.B. FACTORY

For Nos. 132 and 132A



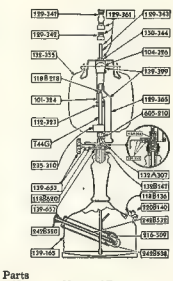
Parts No.	Name of Part	List Each
T44G	Generator	$ .50
355	Pyrex Glass	.90
104-326	Mixing Chamber	.54
112-323	Burner Cap & Screens	.18
112-325	Burner Cap Screen	.03
118A304	Eccentric Block	.09
118B136	Filler Plug Gasket	.03
118B218	Gas Tip (Marked "V")	.09
118B322	Air Intake Tube	.39
101-324	Burner Tube	.21
118B620	Valve Stem Packing	.03
129-341	Finale	.39
129-342	Finale Nut	.15
129-343	Shade Support Rod	.12
129-353	Tip Cleaner Stem Complete	.18
129-361	Finale Fitting Assembly	.66
132-138	Fuel Tip Needle and Head	.12
132-146	Fuel and Air Wire (Fuel Tip Marked "S")	.33
132-147	Handle Lock Nut	.12
132-148	Fuel and Air Wire (With Fuel Tip and Fuel Needle) (Fuel Tip Marked "S")	.66
132-653	Valve Stem Complete	.48
132A145	Handle	.39
132A165	Fount Complete	4.95
132A354	Valve Body	.81
132A357	Fuel Valve Complete (Fuel Tip Marked "S")	1.65
132A398	Burner Complete	3.30
216-509	Pump Leather	.06
216-532	Air Stem	.21
216-538	Check Valve	.21
220B146	Filler Plug Complete	.54
605-210	Jamb Nut	.03

For Nos. 134, 134P and 134G



Parts No.	Name of Part	List Each
T44G	Generator and Cleaning Needle (Less Jamb Nut) (Gas Tip Marked "V")	$ .50
355	Pyrex Glass Mantle Protector	.90
101-620	Valve Stem Packing	.03
104-132	Filler Plug Air Stem	.21
104-326	Mixing Chamber	.54
104-441	Ball Nut	.21
112-323	Burner Cap & Screen	.18
112-325	Burner Cap Screen	.03
118A304	Eccentric Block	.09
118B136	Filler Plug Gasket	.03
118B147	Handle Lock Nut	.12
118B218	Gas Tip (Marked "V")	.09
118B322	Air Intake Tube	.39
101-324	Burner Tube	.21
375-164	Filler Plug Complete	.66
129-353	Tip Cleaner Stem Complete	.18
129A307	Valve Body	.66
129A353	Valve Stem Complete	.33
129A357	Valve Complete	1.35
130-341	Shade Screw	.15
134-145	Handle	.33
134-165	Fount Complete	3.36
134-399	Burner Complete	3.00
216-509	Pump Leather	.06
410-585	Pump	.48
605-210	Jamb Nut	.03

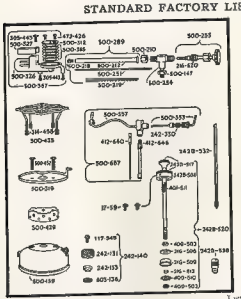
For No. 139



Parts No.	Name of Part	List Each
T44G	Generator and Cleaning Needle (Less Jamb Nut) (Gas Tip Marked "V") (118C299)	$ .50
T44K	Generator and Cleaning Needle (Less Jamb Nut) (Gas Tip Marked "V") (118C299)	.50
355	Pyrex Glass Mantle Protector (132-355)	.90
101-324	Burner Tube	.21
104-326	Mixing Chamber	.54
104-469	Hanger Rod	.18
112-323	Burner Cap & Screen	.18
112-325	Burner Cap Screen	.06
118A304	Eccentric Block	.09
118B136	Filler Plug Gasket	.06
118B218	Gas Tip (Marked "V")	.09
118B620	Valve Stem Packing	.06
129-335	Shade Holder Clamps (Packed)	.33
129-341	Finale	.39
129-342	Finale Nut	.15
129-343	Shade Support Rod	.12
129-353	Tip Cleaner Stem Assembly	.18
129-361	Finale Assembly	.66
129-365	Air Intake Tube	.48
129A307	Tip Cleaner Body	.66
132-147	Handle Lock Nut	.12
132A354	Valve Body	.81
139-165	Fount Complete	3.99
139-399	Burner Complete	3.30
139-653	Valve Stem Complete	.99
139-657	Valve Complete	1.50
143-145	Handle	.48
150-344	Support Rod Nut	.06
216-509	Pump Leather	.09
220B140	Filler Plug Complete	.54
235-310	Preheater Cup & Wick	.18
242B520	Pump Plunger Complete (Less Air Stem)	.48
242B532	Pump Air Stem	.21
242B538	Check Valve	.21
242K910	Alcohol Generating Can	.33
605-210	Jamb Nut	.06

COLEMAN CAMP STOVE REPAIRS

STANDARD FACTORY LIST PRICE—F.O.B. FACTORY—For No. 500


505-445
500-527
472-426
500-218
500-345
500-289
500-330
500-337
500-219
500-284
500-235
500-218
500-317
500-337
500-219
316-870
500-447
500-284
500-336
505-443
500-337
500-337
500-337

SECTION NO. 2

CUTLERY and SILVERWARE

Pocket Cutlery
Silverware
Clipping Machines
Shears & Scissors
Toilet Clippers

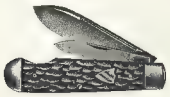
Table Cutlery
Watches
Safety Razors
Clocks
Electric Shavers

MOORE-HANDLEY HARDWARE COMPANY
BIRMINGHAM, ALABAMA

AMERICA'S BEST POCKET KNIVES

No. A1100 **$8.00 Doz.**

Stag handle, one large spear blade, one punch blade, full polished, brass lined, nickel silver cap, bolster and shield. Size 3½ inches. Packed ½ doz. to box. Weight per doz 2 lbs.

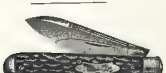


No. A1102 **$8.00 Doz.**

Stag handle, one large spear blade, one pen blade, full polished, brass lined, nickel silver cap, bolster and shield. Easy opener. Size 3¼ inches. Packed ½ doz. to box. Weight per doz. 1½ pounds.

No. A1104 **$8.00 Doz.**

Stag handle, one spear blade, one pen blade, full polished, nickel silver bolster, cap and shield. Size 3 inches. Packed ½ doz. to box. Weight per doz. 2 pounds.

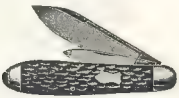


No. A1105 **$10.80 Doz.**

Stag handle, one large spear blade, one pen blade, full polished, brass lined, nickel silver cap, bolster and shield. Sizes 3¼ inches. Packed ½ doz to box. Weight per doz. 1½ lbs.

No. A1106W **$8.00 Doz**

White celluloid handle, one large spear blade one pen blade, full polished, brass lined, nickel silver cap, bolster and shield. Size 3¼ inches. Packed ½ doz. to box. Weight per doz. 1¼ pounds.



No. A1160 **$8.00 Doz.**

Stag handle, one large spear blade, one pen blade. Blades are mirror polished on both sides, brass lined, nickel silver cap, bolster and shield. Size 3⅜ inches. Packed ½ doz. to box. Weight per doz. 1½ pounds.

No. A1159 **$8.00 Doz.**

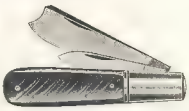
Bone handle barlow, one large spear blade, one pen blade, full steel lined, metal polished bolster. Size 3½ inches Packed ½ doz. to box. Weight per doz. 2½ pounds

No. A1159-W **$8.00 Doz.**

Same as above except white handle.

No. A1159-C **$8.00 Doz.**

Bone Handle Barlow, one clip blad., one pen blade, steel lined polished bolster. Size 3½". Packed ½ doz. to a box. Weight per doz. 2½ pounds



No. A1159-R **$8.00 Doz.**

Bone handle Barlow, one razor blade, one pen blade, full steel lined, metal polished bolster. Size 3½ inches. Packed ½ doz. to box. Weight per doz 2½ pounds.

No. S5060 **$4.00 Doz**

One Blade Barlow, clip blade, com position handle, steel lined. Packed ½ doz. to box. Wt. per doz. 1½ pounds.

No. A1203 **$8.00 Doz.**

Stag handle, one large clip blade, one pen blade, full polished, brass lined, nickel silver cap, bolster and shield Size 3¼ inches. Packed ½ doz. to box. Weight per doz. 2 pounds

No. A1213 **$12.00 Doz.**

Stag handle, one large clip blade, one pen blade, full polished, brass Lined, nickel silver bolsters and shield Size 3¼ inches. Packed ½ doz. to box Weight per doz. 1¾ pounds.

POCKET KNIVES

AMERICA'S BEST

Forged from Highest Grade Cutlery Steel—Guaranteed Free from Defects

No. A1260 **$16.00 Doz.**

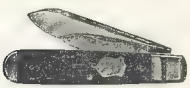
Stag handle, one large sabre clip blade, one spaying blade, blades are mirror polished on both sides, brass lined, nickel silver cap and bolster and shield. Size 3⅞ inches. Packed ½ doz. to box. Weight per doz. 2½ lbs

No. A1231 **$16.00 Doz.**

Stag handle, one large clip blade, one pen blade, full polished, brass lined, nickel silver cap, bolster and shield. Size 4½ inches. Packed ½ doz. to box. Weight per doz. 2¾ lbs

No. A1127 **$16.00 Doz.**

Stag handle, one large spear blade, one pen blade, full polished, brass lined, nickel silver bolsters and shield Size 4¼ inches. Packed ½ doz. to box Weight per doz. 3¼ pounds.



No. A1129 **$16.00 Doz.**

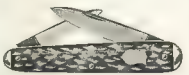
Stag handle, one large spear blade, one pen blade, full polished, brass lined, nickel silver cap, bolster and shield. Size 4 inches. Packed ½ doz to box. Weight per doz. 2¾ pounds.

No. A2128 **$8.00 Doz.**

Stag handle, one large spear blade, one pen blade, brass lined, full polished, nickel silver bolster and shield Size 3¼ inches. **Packed ½ doz. to** box. Weight per doz. ¾ pound.

No. A2127 **$8.00 Doz.**

Super Pearl unbreakable handle, one large spear blade, one pen blade, blades mirror polished on both sides, brass lined, nickel silver tips and shield. Size 3¼ inches. Packed ½ doz. to box Weight per doz. ¾ pound.



No. A2126 **$8.00 Doz.**

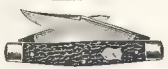
Stag handle, one large spear blade, one pen blade, both blades mirror polished on both sides, brass lined, nickel silver tips and shield. Size 3¼ inches. Packed ½ doz. to box. Weight per doz. ¾ pound.

No. A2122W **$8.00 Doz.**

White celluloid handle, one large spear blade, one pen blade, full polished, brass lined, nickel silver bolsters and shield. Size 3¼ inches. Packed ½ doz. to box. Weight per doz. ¾ lb.

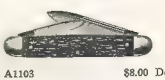
No. A2115 **$8.00 Doz.**

Stag handle, one large spear blade, one file blade, full polished, brass lined, nickel silver bolster and shield. Size 3¼ inches. Packed ½ doz. to box Weight per doz. ½ pound



No. A2219 **$12.00 Doz.**

Stag handle, one large clip blade, one pen blade, full polished, brass lined, nickel silver bolsters and shield. Size 3½ inches. Packed ½ doz. to box Weight per doz. ¾ pound.



No. A1103 **$8.00 Doz.**

Stag handle, one spear blade, one pen blade, full polished, brass lined, nickel silver cap and bolster. Size 2½ inches. Packed ½ doz. to box. Weight per doz. 1 pound.

No. A1508S **$10.80 Doz.**

Ultra Pearl Unbreakable handle, one large spear blade, one pen blade, full polished, brass lined, nickel silver bolsters. Size 3¼ inches. Equipped with shackle for attaching watch chain. Packed ½ doz. to box. Weight per doz. ½ pound.

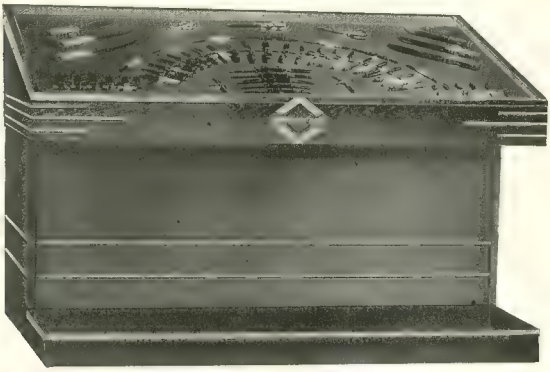
No. A2350 **$8.00 Doz.**

Congress Knife—Stag handle, one large sheepfoot blade, one pen blade full polished, brass lined, nickel silver bolsters. Size 3 inches. Packed ½ doz. to box. Weight per doz. ½ lb.

AMERICA'S BEST FLOOR CUTLERY CASE

NUMBER 5

LOWEST COST ON A CASE OF THIS KIND OFFERED DEALERS TODAY



FOR POCKET KNIVES—FLATWARE AND SCISSORS
PROMINENTLY DISPLAYED WILL HELP SALE OF ALL CUTLERY

Made of Beautiful Ply-Wood Finished in Natural Golden Oak Color, one Panel Green Felt Covered, with one of each item wired on. Approximately 50 Patterns of Pocket Knives and 10 Patterns Flatware

Dimensions:—Length 5 ft., Width 30 inches, Height Back 41 inches, and Height Front 32 inches. Weight approximately 200 lbs. Back is totally enclosed to hold stock and can be locked.

CASE ONLY with Initial Order $100.00—(Net) $30.00

CASE ONLY with Initial Order of Less $100.00—(Net) 60.00

F.O.B. BIRMINGHAM

AMERICA'S BEST COUNTER CUTLERY CASE

NUMBER 3

FREE with Purchase of $40.00 (Net worth) of America's Best Cutlery

24 Compartments for Reserve Stock of America's Best Cutlery.

Dimensions:—10½" High, 25" Wide and 8¾" Deep. Weight 15 pounds

Has Drop Door with Secure Lock

SUGGESTED ASSORTMENT FOR No. 3 CASE..... $80.00

F.O.B. Birmingham, Ala.

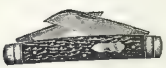
Knife No.	Quantity	Per Doz.	Retail Each
A-1100	½ Doz.	$ 8.40	$ .50
A-1159	¾ Doz.	8.40	.50
A-1160	½ Doz.	8.40	.50
A-1203	¾ Doz.	8.40	.50
A-1258	⅜ Doz.	8.40	.50
A-2127	⅜ Doz.	8.40	.50
A-2128	½ Doz.	8.40	.50
A-2350	½ Doz.	8.40	.50
A-1114	½ Doz.	12.00	.75
A-1125	½ Doz.	$12.00	$ .75
A-1221	½ Doz.	12.00	.75
A-2219	½ Doz.	12.00	.75
A-1115	½ Doz.	12.00	.75
A-1127	¼ Doz.	16.00	1.00
A-1129	¼ Doz.	16.00	1.00
A-1251	¼ Doz.	16.00	1.00
A-1261	¼ Doz.	16.00	1.00
A-1254	1/6 Doz.	21.60	1.25

POCKET KNIVES

AMERICA'S BEST

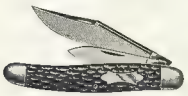
Forged from Highest Grade Cutlery Steel—Guaranteed Free from Defects

CONGRESS PATTERN



No. 2352 **$12.00 Doz.**

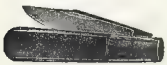
3¼" stag handle, one sheepfoot blade, one pen blade, brass lined, nickel silver bolster. Packed ½ doz. to box, weight per dozen 1½ lbs.



No. A-3120—Stag **$12.00 Doz.**

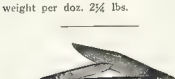
No. A-3121—Colored **10.80 Doz.**

3¼" Curved handle, one clip blade, one Pen blade, Brass lined, nickel silver bolsters and shield. Packed ½ doz. to box, weight 1¼ lbs. to doz.



No. A-3122 **$14.40 Doz.**

3½" stag handle, one clip blade, one pen blade, brass lined, nickel silver bolster and shield. Packed ½ doz. to box, weight per doz. 2 lbs.



No. A-3124 **$14.40 Doz.**

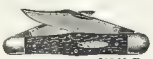
5" composition handle, 4" clip blade, mirror finished. Packed ½ doz. to box, weight per doz. 2¾ lbs.

No. A-3125 **$12.00 Doz.**

2½" stag handle, one clip blade, one pen blade, brass lined, nickel silver shield and bolster. Packed ½ doz. to box, weight per doz. 2¼ lbs.

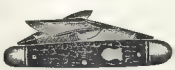
No. O-3126 **$10.80 Doz.**

5" Red and White handle, 4" clip switch blade, brass lined, nickel silver bolster Packed ½ doz. to box, weight per doz. 2¾ lbs.



No. A-3128 **$12.00 Doz**

2¾" stag handle, one clip blade, one pen blade, brass lined nickel silver bolster and cap. Packed ½ doz. to box, weight per doz. 1 lb.



No. A-3127 **$16.00 Doz.**

3" stag handle, one clip blade, one pen blade, one nail file blade, brass lined nickel silver bolster and cap Packed ½ doz to box, weight per doz 1½ lbs.

No. A-3123 **$14.40 Doz.**

3¼" Stag handle, one Clip, one Speying, one Sheepfoot blade, brass lined nickel silver bolster and cap Packed ½ doz. to box, weight per doz 1¼ lbs.

No. A-3129 **$16.00 Doz.**

3" stag handle, one speying, one clip, one pen blade, brass lined nickel silver bolster. Packed ½ doz. to box, weight per doz. 2¼ lbs.

No. A-3130-W **$18.00 Doz.**

4" white handle, one spear blade, one pen blade, brass lined nickel silver bolster and shield. Packed ½ doz to box, weight per doz 2½ lbs

No. A-3131-W **$16.80 Doz.**

2½" White narrow handle, one Clip and one pen blade, brass lined nickel silver bolster. Weight 1 lb. to doz

No. 800 **$18.00 Doz.**

Assorted style pearl handle knives. 3 inch handle, brass lined, silver bolster, one spear blade, one pen blade, mirror finished. Packed 1 doz. to box. Weight per doz. 1 pound.

No. 150 **$12.00 Doz.**

Hawk Bill Knife, 3¼" wood handle, with 3" mirror polished blade. ½ doz to box. Weight per doz. 2½ pounds

BOY SCOUT KNIFE

No H-30 **$8.40 Doz.**

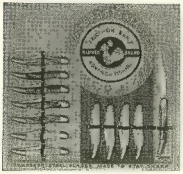
Has Morse code, and picture of boy on black 3½" handle, 4 blades, one 2½" spear blade, one screw driver, one bottle opener, and one leather punch blade, polished bolster, shackle on end. Packed one to box. Weight per doz. 3 pounds.

POCKET KNIVES

We Do Not Break Assortments

No.	Doz.
TW-3—Curved Handles	$5.40
TW-1—Straight Handles	5.40

One doz. assorted colors, length 3", full bolsters, one pen blade, one clip blade. One doz. on Display Board. Weight 2 pounds.



We Do Not Break Assortments

No.	Doz.
JW-20—Asst Handles	$5.40
JW-21—White Handles	5.40

One Doz. on Display Card, 4 inch handles, large bolsters, 3½ inch switch blade. Weight 1½ pounds.

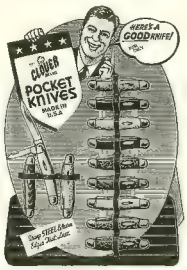
POCKET KNIVES

We Do Not Break Assortments

On Attractive Display Card

No. JM-1200 $5.40 Doz.

One doz. 4" assorted color handles with cross bar, 3" clip blade, bright bolsters. Weight 1¼ pounds.



No. 881 $5.40 Doz.

Assorted colors to card in solid and mottled designs. Length 3" with bolster, one pen and one dual clip blade, curved back. Weight per doz. 2 pounds

No. 270-IS $5.40 Doz.

Bone Handle Barlow, one large spear blade, one pen blade. Size 2" over-all. Packed 1 doz. to display card. Weight per doz. 1¾ pounds.

No. JM-300 $4.80 Doz.

Double ended straight back knife with assorted color handle. Metal lined, full bolster, length 3" with one spear and one pen blade. Packed 1 doz. to display card Weight per doz. 2 lbs

No. JM-3-A $4.80 Doz.

Curved handle knife with bolster, metal lined, one clip blade and one pen blade, length 2", assorted handles. One doz to display card. Weight per doz. 2 pounds.

NEW—25c RETAILER

No. 1095-B $4.20 Doz.

One doz. assorted colors to display card, length 3", full bolster, curved handle with clip blade, similar to TW-3 except has only one blade. Weight of card 1½ pounds.

No. A-221 $4.00 Doz.

One doz. single blade knives on an attractive card, assorted handles and blades. Weight per doz. 1½ pounds.

No. TSB $12.60 Card

Retail 25c

This assortment consists of 3 doz. one blade pocket knives in various shapes and colors. All have polished bolsters and are metal lined. Very similar to No. BE Assortment with exception of number of blades. One to carton. Weight each 3½ lbs.

No. BE $16.20 Asst.

Retail 39c

Assortment consists of 3 doz. Pocket Knives on attractive display board, assorted shapes, sizes, colors and blades, all are metal lined and have bolsters, one to box, weight 4 lbs. to assortment.

POCKET KNIVES

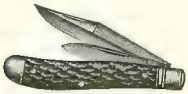
AMERICA'S BEST

Forged from Highest Grade Cutlery Steel—Guaranteed Free from Defects

Our Stock Clip Blade Instead of Spear Blade.

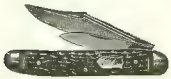
No. A1262 **$8.00 Doz.**

Celluloid handle, one large clip blade, one pen blade, blades are mirror polished on both sides, brass lined, nickel silver bolster and shield. Size 3½ inches. Packed ½ doz. to box. Weight per doz. 2 pounds.



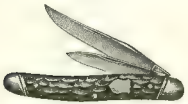
No. A1258 **$8.00 Doz.**

Stag handle, one large beveled clip blade, one pen blade, full polished, brass lined, nickel silver cap and bolster. Size 2¾ inches. Packed ½ doz. to box. Weight per doz. ¾ lb.



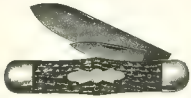
No. A1263 **$10.80 Doz.**

Stag handle, one large clip blade, one pen blade, blades are mirror polished on both sides, brass lined, nickel silver bolster and shield. Size 3½ inches. Packed ½ doz. to box. Weight per doz. 1½ pounds.



No. A1257 **$12.00 Doz.**

Stag handle, one large clip blade, one pen blade, full polished, brass lined, nickel silver slanting bolsters and nickel silver shield. Size 3¼ inches Packed ½ doz. to box. Weight per doz. 1 pound.



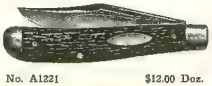
No. A1115 **$12.00 Doz.**

Stag handle, one large spear blade, one pen blade, full polished, brass lined, nickel silver bolsters and shield Size 3½ inches. Packed ½ doz. to box Weight per doz. 1½ pounds.

No. A1116W—White **$14.40 Doz.**

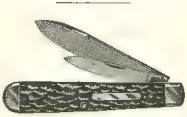
No. A1116—Stag **14.40 Doz.**

One large spear blade, one pen blade, full polished, brass lined, nickel silver bolsters and shield. Size 3½ inches. Packed ½ doz. to box Weight per doz. 2 pounds.



No. A1221 **$12.00 Doz.**

Stag handle, one large clip blade, one pen blade, full polished, brass lined, nickel silver cap, bolster and shield. Size 3½ inches. Packed ½ doz. to box. Weight per doz. 2 lbs.

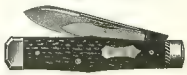


No. A1114 **$12.00 Doz.**

Stag handle, one large spear blade, one pen blade, full polished, brass lined, nickel silver bolster and shield Size 3½ inches. Packed ½ doz. to box. Weight per doz. 1¼ pounds.

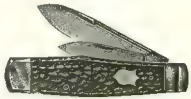
No. A1222 **$14.40 Doz.**

Stag handle, one large clip blade, one pen blade, full polished, brass lined, nickel silver bolsters and shield. Size 3¼ inches. Packed ½ doz. to box. Weight per doz. 2 pounds.



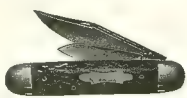
No. A1124 **$14.40 Doz.**

Stag handle, one large spear blade, one pen blade, full polished, brass lined, nickel silver bolsters and shield. Size 3½ inches. Packed ½ doz. to box. Weight per doz. 1¾ pounds.



No. A1125 **$12.00 Doz.**

Stag handle, one large spear blade, one pen blade, full polished, brass ined, nickel silver cap bolster and shield. Size 3¾ inches. Packed ½ doz. to box. Weight per doz. 2¼ lbs.



No. A1265 **$12.00 Doz.**

Stag handle, one large clip blade, one pen blade, blades are mirror polished on both sides, brass lined, nickel silver bolster and shield. Size 3½ inches. Packed ½ doz. to box. Weight per doz. 2 pounds

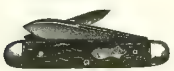
POCKET KNIVES

AMERICA'S BEST

Forged from Highest Grade Cutlery Steel—Guaranteed Free from Defects

No. A2354 **$16.00 Doz.**

Stag handle, two large sheepfoot blades, two pen blades, full polished, nickel silver cap and bolster Size 3½ inches. Packed ½ doz. to box. Wt. per doz. 2 pounds.



No. A1550 **$18.80 Doz.**

Stag handle, one large spear blade, one pen blade, full polished, brass lined, nickel silver bolsters and shield. Size 3½ inches. Packed ½ doz .to box. Weight per doz. 1 pound.

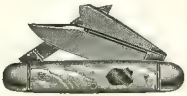
No. A1261 **$16.00 Doz.**

Stag handle, one large clip blade. one large spear blade, blades are mirror polished on both sides, brass lined. nickel silver bolster and shield. Size 3⅜ inches. Packed ½ doz. to box Weight per doz. 2 pounds.

No. A3205W—White **$16.00 Doz.**

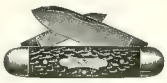
No. A3205S—Stag **16.00 Doz**

One large clip blade, one sheepfoot blade, one speyng blade, full polished, brass lined, nickel silver bolster and shield. Size 3⅜". Packed ½ doz. to box. Weight per doz. 2 pounds.



No. A3204W **$12.00 Doz.**

3½ inch white handle, nickel bolster, brass lined, 2⅛ inch clip blade, 1⅛ inch pen blade and 1⅜ inch speying blade. Packed ½ doz. to box. Weight per doz. 1¾ pounds.



No. A1150 **$12.00 Doz.**

Stag handle, one large spear blade, one pen blade, full polished, brass lined, nickel silver bolster and shield. Size 3¾ inches. Packed ½ doz. to box. Weight per doz. 1¾ pounds.

No. A1251 **$16.00 Doz.**

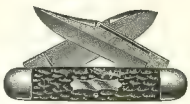
Stag handle, one large clip blade, one speying blade, full polished, brass lined, nickel silver bolsters and shield Size 3⅜ inches. Packed ½ doz. to box. Weight per doz. 1½ pounds.

No. A1130 **$16.00 Doz.**

Colored handle, one clip blade, one spear, one cut off pen blade, full polished, nickel silver bolster cap and shield. Size 3½ inches. Packed ½ doz. to box. Weight per doz. 2 lbs

No. A1153 **$19.20 Doz.**

Stag handle, one large spear blade, one large clip blade, full polished, brass lined, nickel silver bolsters and shield. Size 4½ inches. Packed ½ doz. to box. Weight per doz. 2½ pounds.



No. A1254 **$21.60 Doz.**

Stag handle, one large sabre clip blade, one large spear blade, full polished, brass lined, nickel siver bolsters and shield. Size 4⅛ inches. Packed ½ doz. to box. Weight per doz. 1 lb.

No. A7198 **$16.00 Doz.**

Stag handle, one large clip, one sheepfoot and one speying blade, full polished, brass lined, nivel silver bolster and cap. Length 4¼". Packed ½ doz. to a box. Weight per doz. 2 pounds.

No. A3111 **$14.40 Doz.**

Attractively colored celluloid handle, one large spear blade, one sheepfoot blade and one pen blade, blades mirror polished on both sides, brass lined, nickel silver bolster and shield. Size 3⅝ inches Weight per doz. 2 lbs.

BASEBALL BATS

LOUISVILLE SLUGGER BATS
GENUINE MODELS

No. 125-PM—Pepper Martin	$3.20 Each
No. 125-MO—Mell Ott	3.20 Each
No. 125-CG—Chas Gehringer	3.20 Each
No. 125-JC—Joe Cronin	3.20 Each
No. 125-HG—Hank Greenberg	3.20 Each
No. 125-BD—Bill Dickey	3.20 Each
No. 125-CK—Chas. Keller	3.20 Each
No. 125-ELS—Ernie Lombardi Special	3.20 Each
No. 125-TW—Ted Williams	3.20 Each
No. 125-JD—Joe DiMaggio	3.20 Each
No. 125-BRS—Bable Ruth Special	3.20 Each
No. 125-RY—Rudy York	3.20 Each
No. 125-DM—"Ducky" Medwick	3.20 Each
No. 125-BRN—Buddy Ryan	3.20 Each
No. 125-JG—Joe Gordan	3.20 Each

Powerized and bone rubbed, natural white finish, professional ball players, made in assorted models of the above famous sluggers with autographs. Each bat to each player's particular choice. Lengths 34, 35 and 36 inches stamped on knob end. Packed in cartons of one doz. Each bat in a paper bag. Weight per doz. 30 pounds.

WARRIOR

No. WBR—Babe Ruth Style	$2.00 Each
No. WMO—Mel Ott Style	2.00 Each
No. WMM—Mickey Medwick Style	2.00 Each
No. WLG—Lou Gehrig Style	2.00 Each
No. WPM—Pepper Martin Style	2.00 Each
No. WJD—Joe DiMaggio Style	2.00 Each
No. WBRS—Buddy Ryan Special	2.00 Each
No. WJF—Jimmie Foxx Style	2.00 Each

The Bat of Bats. Made expressly for use and in our opinion the best Bat that can be made. Made of the finest grades of ash. All finished in white with red lettering. The player's name on the bat indicates the style. Lengths 35 and 36 inch. Each Bat is marked on the end with its length. Assorted weights. Packed 1 doz. to carton. Wt approximately 28 pounds.

LOUISVILLE SLUGGER BATS
GENUINE MODELS

No. 40-DM—"Ducky" Medwick	$2.88 Each
No. 40-CG—Chas Gehringer	2.88 Each
No. 40-HG—Hank Greenberg	2.88 Each
No. 40-RY—Rudy York	2.88 Each
No. 40-ELS—Ernie Lombardi Special	2.88 Each
No. 40-BRS—Babe Ruth Special	2.88 Each
No. 40-JC—Joe Cronin	2.88 Each
No. 40-JJ—Joe Jackson	2.88 Each
No. 40-JDS—Joe DiMaggio Speciaal	2.88 Each
No. 40-DR—Buddy Ryan	2.88 Each
No. 40-JFS—Jimmy Foxx Special	2.88 Each
No. 40-LG—Lou Gehrig	2.88 Each

Professional Ball Players, autographed model, saddle brown and mahogany finish, oil tempered. Made in assorted models of the above famous sluggers with autographs. Each bat to each player's particular choice. Lengths 35 and 36 inches. Each bat in a paper bag. One doz. in carton Weight per doz. 30 pounds.

MORHAND

No. MH-25—Morhand	$3.80 Doz.

Light weight, natural color baseball bat for small boys. Medium size knob. Length 29, 30 and 31". Weight to doz. 15 pounds.

No. MH-50	$8.00 Doz.

League Bat, brown with white tape grip, especially suited for high school players. Lengths 32, 33, 34 and 35". One doz. in carton. Weight per doz. 28 pounds.

No. MH-75	$12.00 Doz.

Natural finish with tape grip, well shaped, regulation size, used by high school and ameteur leagues. Lengths 34, 35 and 36". One doz. in carton. Weight per doz. 30 pounds.

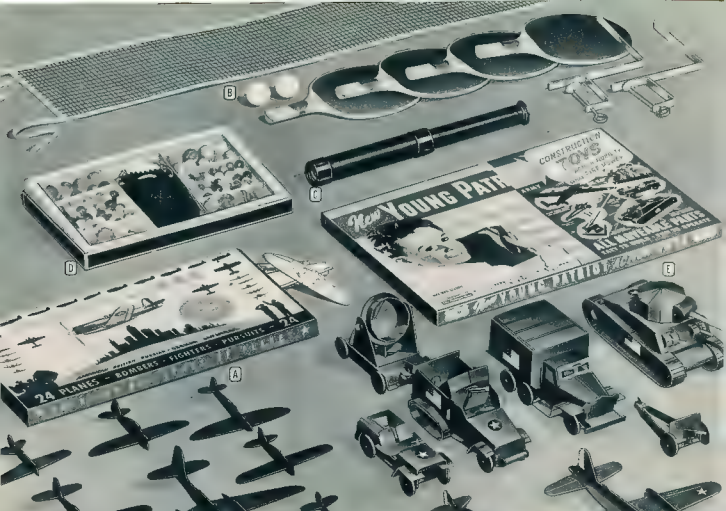
No. MH-100-N	$15.60 Doz.

Natural white finish bat, large barrel with knob on end, branded league regulation, copied from models used by Major Leagues. Lengths 34, 35 and 36 inches. One doz. to carton. Weight per doz. 30 pounds

SPECIAL DEALER ASSORTMENT

No. 750—Morhand	$9.60 Asst.

Consists of three each of the following bats. MH-25, MH-50, MH-75, MH-100. One doz. to assortment. Weight per Assortment 28 pounds.



Ping-pong...marbles...airplanes...skates

A **Ident-o-Plane Kit.** Learn to identify U.S. and enemy planes by actually making them! Kit gives material for 24 "Silhouette" planes easy for little hands to make. Die-cut wood sheets, with insignia for each. Instructions. Suitable for youngsters up to 10 years old.
48 T 3806—Ship wt 2 pounds 8 ounces. . . 57c

B **Genuine Ping Pong Set** Four professional-type 10½x 6¼-in. wood paddles, sandpaper on both sides. 2 heavy metal posts 60-in. official net, bound, with tie-strings; 2 standard balls. Made by Parker Bros
48 T 2211—Doubles Set. Ship. wt. 3 lbs. 4 oz. . $2.85
48 T 2210—Singles Set. Same as above with 2 paddles, 1 ball. Ship. wt. 2 lbs.. . . . . $1.69

C **Spotter-Scope.** Be a plane spotter! This telescope really focuses and magnifies 5 times. Heavy cardboard tube; Lenses are Army rejects. Ship. wt. 8 oz.
48 T 3864—9 in. long, extends to abt. 15 in. . . .47c

D **Akro Agate Glass Marbles.** A handsome gift set, large pouch, 98 marbles, 2 sizes shooters, 50 ring size, Almost unbelievable. Red, Blue, Green, Yellow.
48 T 745—98 MARBLES. Ship. wt. 2 lbs. 9 oz. 89c
48 T 744—54 Akro Agate Glass Marbles, smaller pouch. 2 sizes of shooters, Ship. wt. 1 lb. 6 oz.. . . . . .45c
48 T 743—28 Akro Agate Marbles, Small pouch. Shipping weight 14 ounces 28c

E **Young Patriot Army Combat Set.** Make your own U.S. Army Fighters. Twenty-two realistic "action" toys designed with movable parts . . . Jeep bumps and lists when you push it. Tank goes backward, forward; Gun turret revolves. Easy to build . . . fun to operate. Pieces die-cut from extra heavy fiberboard and finished in genuine Army color. . non-reflecting Brownish-Green. Red, White and Blue insignia for all fighter planes. Set includes: B-24 Liberator Bomber, wingspread 18 inches; B-26 Marauder Light Bomber; Field Howitzer; 155 Millimeter Gun; Anti-Tank Gun; 7-inch Jeep; 8-inch Tank Destroyer; General Sherman Tank; Mobile Searchlight Unit, 9-inch Army Truck; P-47 Thunderbolt Fighter Plane, Ten Soldiers; Big Target, 9 by 11 inches. Instructions. Ship. wt. 2 lbs.
48 T 1260—Young Patriot Army Combat Set. 83c

F **Twin Runner Shoe Skates.** Ideal skates for small tots to learn on. . . provide wider base than a single runner skate . . . yet permit strokes much like single runners. Top-grain leather shoes have felt innersole lining . . give extra warmth and comfort. Unfinished steel runners riveted firmly to shoe. No clamps to fuss with. **Children's Sizes:** 9, 10, 11, 12, 13. If child takes half-size, order next size larger. Ship. wt. 2 lbs. 4 oz.
48 T 751—White Top-Grain Leather . . . .Pair $3.49
48 T 752—Black Top-Grain Leather. . . . Pair 3.49

CALDWELL TANKS

We are prepared to furnish cypress or yellow pine tanks of any size, capacities or shapes, ranging from small tanks of approximately 100 gallons capacity to 130,000 capacity. We list below a few of the standard sizes and we will quote prices on any other sizes upon receipt of complete specifications.

CONSTRUCTION

In the manufacture of these Tanks, the bottom pieces are dressed, ripped, jointed and well doweled and the edges chamfered for the croze or groove in the staves but left a little bit thicker to allow for shrinkage before erecting, so that a thin shaving must be taken off with a hand plane in erecting to make a driving fit with the croze in the staves. The staves are dressed, ripped and jointed and the croze or groove cut to suit the circle of the bottom and the taper of the tank

Complete with round loops and lugs Shipped knocked down.

Carefully made of best selected material.

Nos.	Capacity, Gallons	Inside Diameter	Inside Depth	No. of Hoop	1¼ in. Cypress Shipping Weight, Lbs.	1¼ in. Cypress Each	2 in. Cypress Shipping Weight, Lbs.	2 in. Cypress Each
16	588	5 ft. 0 in.	4 ft. 0 in.	4	373	$37.11	479	$ 45.34
18	796	5 ft. 0 in.	5 ft. 5 in.	5	474	46.96	608	61.08
23	1145	6 ft. 0 in.	5 ft. 5 in.	5	609	56.88	768	73.95
31	1344	6 ft. 6 in.	5 ft. 5 in.	5	657	62.16	839	80.71
33	1592	6 ft. 6 in.	6 ft. 5 in.	6	742	70.35	950	91.46
38	1847	7 ft. 0 in.	6 ft. 5 in.	6	819	77.10	1042	100.23
43	2120	7 ft. 6 in.	6 ft. 5 in.	6	884	83.34	1128	108.55
44	2450	7 ft. 6 in.	7 ft. 5 in.	7	985	92.73	1255	120.56
54	2781	8 ft. 0 in.	7 ft. 5 in.	7	1067	100.44	1361	130.58
61	3572	8 ft. 6 in.	8 ft. 5 in.	7	1251	117.84	1597	153.20
67	4004	9 ft. 0 in.	8 ft. 5 in.	7	1357	127.30	1727	165.36
78	5532	10 ft. 0 in.	9 ft. 5 in.	8	.....	.....	2165	206.70
82	6100	10 ft. 6 in.	9 ft. 5 in.	8	.....	.....	2290	218.55
91	7120	12 ft. 0 in.	8 ft. 5 in.	7	.....	.....	2479	237.44
97	8644	12 ft. 6 in.	9 ft. 5 in.	8	.....	.....	2844	272.37
98	10481	12 ft. 6 in	11 ft. 5 in.	12	.....	.....	3316	316.64

Larger Sizes on Application

Covers are furnished extra for any tanks. Unless so specified we do not quote covers with tanks.

TANK LUGS

We can furnish malleable iron round tank lugs as follows:

	Each
½ inch	$0.36
⅝ inch	.48
¾ inch	.60
⅞ inch	.72
1 inch	.96
1¼ inch	1.20

CALDWELL TANKS AND TOWERS

TUBULAR COLUMN TOWER

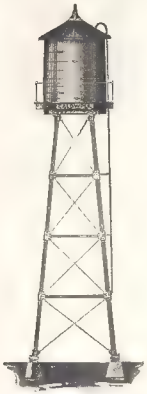
This Tower is the simplest in design of any on the mar ket, and the easiest to erect as the use of socket connections does away with all riveting and makes it unnecessary to use skilled labor in putting it up. Any ordinary mechanic can erect the structure with common labor

Practically no scaffolding is required as the sections are short and each is just like the others, and one section can be used from which to erect the next. A ginpole with ropes and blocks and wrenches are all the tools required

On account of its round columns, this tower offers less resistance to the wind than any other, sheds water easier and holds paint better, and it is the most graceful and handsome tower on the market. The stability of these towers is attested by the fact that many have passed through the fiercest tropical storms, and even cyclones, without being budged a particle.

This Tower is built with 4 columns It is constructed for Tanks from 1,000 to 40,000 gallons

ANGLE COLUMN TOWER



Where customers prefer a Tower with riveted or bolted sections, we supply the Angle Column Tower herewith illustrated for Tanks of 15,000 to 22,000 gallons capacity and less, and our Latticed Column Tower for larger sizes.

Unless otherwise specified, we furnish the Towers with bolted sections.

These Towers are altogether unlike the light, flimsy and fragile structures usually furnished under this name; they have enough weight of metal and bulk of material to satisfy the eye that their strength is adequate. In other words, they look heavy and strong, and an examination of the design and construction according to engineering standards, will make this assurance doubly sure. They not only have a sufficient factor of safety or reserve strength to meet any excessive demands upon them when they are comparatively new, but sufficient to do so after corrosion has taken place year after year, and anything less than this means a structure of defective design and inadequate strength

We build these Towers in multiple heights of ten feet, and for tanks of 1,000 gallons capacity and up.

MINNOWS

HEDDON WOUNDED SPOOK

Series No. 9160 $15.84 Doz.

No.	Color
9162-XS	White & Red Shore
9169-XRS	Silver Shore
9169-SS	Silver Scale

Swims on its side like a wounded minnow. Spinners revolve easily at slow speed and at fast speed kick up a lot of fuss. Very buoyant and responsive at slow speed. Works best when allowed to lie still, then move slowly followed by an occasional sharp jerk. Length 4¼", weight ¾ oz. Three Trebles. Packed one to box.

JOINTED RIVER RUNT

Series No. 9330 $19.44 Doz.

No.	Colors
9332—	White, red head
9332-XS—	White and red shore
9339-L—	Perch scale
9339-M—	Pike scale
9339-N—	Dace scale
9339-P—	Shiner scale
9339-XRG—	Green shore minnow
9339-XRS—	Silver shore minnow
9339-XRY—	Yellow shore minnow
9339-XBW—	Black and white shore minnow

Transparent bodies. Indestructible finish. For all game fish, everywhere. A very lifelike and natural swimmer with lively side kick to tail. Sinks slowly and travels deep. Length 2¾". Weight ⅝ ounce. Packed one to a box.

FLOATING RIVER RUNT

Another "FISHFLESH" Bait

Semi-Transparent Indestructible Finish

Series No. 9400 $15.84 Doz.

No.	Colors
9402—	White, red head
9402-XS—	White & red shore
9409-D—	Green scale
9409-L—	Perch scale
9409-M—	Pike scale
9409-N—	Dace scale
9409-P—	Shiner scale
9409-PRH—	Shiner scale, red head
9409-XRG—	Green shore minnow
9409-XRS—	Silver shore minnow
9409-XRY—	Yellow shore
9409-XBW—	Black & white shore

This "Floating River-Runt-Spook" will fill a long felt want, and particularly in very weedy waters or lakes full of sunken logs. It floats when at rest, dives when retrieved to a depth of two or three feet, depending upon the speed at the retrieve, swims lively. Its length is 3½" and its weight is ⅜ ounce. Two treble hooks with a special hooking device prevents hooks from interlocking or getting around the collar. One to a box.

HEDDON CHUGGER SPOOK

Series No. 9540 $15.84 Doz.

No.	Colors
9542—	White and red
9549-L—	Perch scale
9549-P—	Shiner scale
9549-XRG—	Green shore minnow
9549-XRS—	Silver shore minnow
9549-XS—	White shore minnow

Fresh-Water and Salt-Water Fish can be teased to strike by clever manipulation of a bait on the surface. This new model is made solely for this use. It is very buoyant and sits in the water at a slant with cupped mouth and head sticking up. When line is jerked lightly, the "Chugger" dives under, catching a big bubble and bobbing quickly to the surface. Particularly effective in quiet waters and in pockets among the pads. Length 3½" Weight ⅝ ounce.

JITTER BUG

Series No. JB $17.40 Doz.

No.	Colors
JB—	Frog
JB—	Red head
JB—	Black and silver scale
JB—	White and silver
JB—	Perch
JB—	All Black
JB—	Yellow
JB—	Pearl

New noisy wiggling surface lure. Especially good for night fishing. Hooks are scientifically placed, making lure practically weedless. Big spoon creates loud paddling sound and makes rod jerking unnecessary. Length 3".

CREEK CHUB PLUNKER

Series No. 3200 $13.46 Doz.

No.	Color
3201—	Natural Perch scale finish
3202—	White, red head
3204—	Golden shiner scale finish
3213—	All Black
3218—	Silver Flash
3219—	Frog
3224—	Red Wing
3225—	White scale

The favorite lure of many bait casters! Toss it into a likely looking "pocket" in the reeds or pads and give a series of very short jerks with the rod. The bobbing, dancing, fussing and "kerplunking" sound—all on the surface— makes the lazy and "logy" Bass, spring into action—and strike hard! Length 3", weight ⅝ ounce.

CREEK CHUB MINNOWS

CREEK CHUB ORIGINAL "INJURED MINNOW"

Series No. 1500 — $15.84 Doz.

No.	Colors	No.	Colors
1500	Natural Pike, scale finish	1504	Golden Shiner, scale finish
1501	Natural Perch, scale finish	1505	Red Side, scale finish
1503	Silver Shiner, scale finish	1518	Silver flash
		1519	Frog finish

Represents wounded minnow lying on its side about "all in" but still able to make a little fuss. Retrieve in a series of slow twitches allowing the bait to rest motionless on surface between jerks. Non-fouling spinners which have a peculiar buzzing vibration in action. Great night bait. Use in shallow water, close to weeds or shore. Length of body 3¾". One to a box. Weight ¾ ounce.

WIGGLE FISH

Series No. 2400 — $19.80 Doz.

No.	Colors	No.	Colors
2401	Natural Perch, scale finish	2403	Silver Shiner, scale finish
2402	White and red	2405	Red side, scale finish
		2418	Silver flash

Double jointed lure. Wagging fluted, nickeled tail. Patented mouth piece. Floats, dives, wiggles its way just below surface or deeper if pulled faster. Excellent for bass, pickerel, pike and muskies. Length of body 3½". Weight ¾ oz. One to a box.

FAMOUS "PIKIE MINNOW"

Series No. 700 — $15.84 Doz.

No.	Colors	No.	Colors
700	Natural Pike, scale finish	702	White with red head
701	Natural Perch, scale finish	704	Golden Shiner, scale finish
		718	Silver flash

Closely resembles Pike Minnow in shape, color, and movement. Big wiggle and unique shape make it great bass getter. Gives best results when reeled slowly. Equally good for trolling or casting. All game fish take this bait especially bass, pike, wall eyed pike, muskellunge, lake trout, etc. Under water minnow. Length of body 4½". Weight ¾ ounce. One to a box.

JOINTED "PIKIE MINNOW"

Series No. 2600 — $19.80 Doz.

No.	Colors	No.	Colors
2600	Natural Pike, scale finish	2604	Golden Shiner, scale finish
2601	Natural Perch, scale finish	2618	Silver flash
2602	White with red head	2619	Frog finish

Has beautiful wiggling movement, flexible and sinuous. Changing speed while reeling in adds to attractive action Creates in fish an irresistible impulse to strike. Easy caster Runs about 12 to 18" deep. Length of body 4¼". Weight ¾ ounce. One to a box.

DING BAT

Series No. 5100 — $15.84 Doz.

No.	Colors
5100	Natural Pike scale, brown legs
5101	Natural Perch scale, green legs
5102	White body, red head
5104	Golden Shiner scale, yellow legs
5113	All Black
5118	Silver flash body, red legs
5119	Frog finish, green legs

A deep running, fast wiggling, fish fooling masterpiece. Weight ⅝ oz., length 2".

MIDGET DING BAT

Series No. 5200 — $15.00 Doz.

No.	Colors
5200	Natural Pike scale, brown legs
5201	Natural Perch scale, Green legs
5202	White body, red head
5204	Golden Shiner scale, yellow legs
5213	All Black
5218	Silver flash body, red legs
5219	Frog finish, green legs

A little brother to the 5100 Series. Suited for stream fishing and for small Mouth Bass, weight ½ oz., length 1⅝ inches.

CREEK DARTER

THE "TWO THOUSAND"

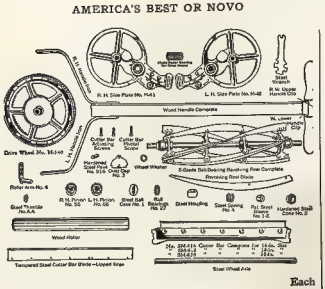
No.	Color	Dozen
2018	Silver Flash	$13.46
2019	Natural Frog	13.46

Darting thru the water near the surface in a life-like manner, this slim little lure is the favorite bait with many fishermen through-out the country, and especially in Florida where it gets those big heavy scrappers—and holds them. Has caught many record bass. The Frog color is an exceptional killer. Length 3¾". Weight ½ ounce.

LAWN MOWER REPAIRS

F. & N. LAWN MOWERS

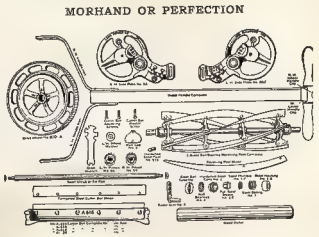
AMERICA'S BEST OR NOVO


R. H. Side Plate No. M-41
L. H. Side Plate No. M-42
Wood Handle Complete
Drive Wheel No. M-3410
Cutter Bar Adjusting Screw
Cutter Bar Pivotal Screw
Wheel Washer
Roller Arm No. 4
R. H. Pinion No. 55
L. H. Pinion No. 66
Steel Ball Cone No. 2
Ball Cup No. 2
Steel Housing
Steel Bushing No. 5
Fy. Steel Bushing No. 2 C
Hardened Steel Ball Cone No. 2
Wood Roller
Steel Wheel Axle

Each

Drive wheel, No. M-3410, Weight 7 Lbs.	$ 3.00
Right hand side plate, No M-441, Weight 4½ Lbs	3.00
Left hand side plate, No. M-442, Weight 4½ Lbs	3.00
Reel, 5 blades complete, (state size of mower, number of blades, and cutter bar number.)	
16 in.	$ 8.00
18 in.	9.00
20 in.	10.00
Extra reel blade, all sizes (state cutter bar number)	
Weight 3 Lbs.	1.50
Cutter bar complete, be sure to state "with lipped edge steel blade, also size wanted, g.ve number appearing on the cast bar.	
SM-616—Weight 4 Lbs.	3.00
SM 618—Weight 4½ Lbs.	3.00
SM-620—We ght 4½ Lbs.	3.00
Cutter bar blade only (state cut. bar No. and if attached with screws or rivets, Weight 3 Lbs.	1.50
Handle irons, both sides alike (state size of mower and cutter bar number), Weight 3½ Lbs. Per Pair	.50
Wood handle, complete	1.00
Wood roller, all sizes (state size wanted and cutter bar number), Weight 2 Lbs.	.60
(State whether roller has steel pins in end or merely holes)	.20
Roller arms, No. 4, both sides alike, Wt. 4 oz.	.20
(State whether wanted for roller with pins in ends or merely holes for pins.)	
Pinion right 55, left 66, Weight 4 oz.	.25
Cones, No. 2, both sides alike, Weight 2 oz.	.50
Wheel axle washer, Weight 1 oz.	.05
Wheel axle cap. No. 334, Weight 1 oz.	.10
Pin on cap, No. 3, both sides alike, Weight 2 oz.	.10
Hardened steel pawls, No. 916, both sides alike (state side plate number), Weight 4 oz.	.10
Ball bearing case, No. 33, both sides alike, Wt. 1 oz.	.40
Ba l retainer, No. 46, both sides alike with balls, Weight 2 oz.	.50
(Extra balls, 5c each)	
Cutter bar adjusting screws, Weight 1 oz.	.05
Cutter bar pivotal screws, Weight 1 oz.	.05
Pinion cap machine screws, with nut, Wt. 1 oz.	.05
Set screws for fastening side plate to axle rod, Wt. 1 oz.	.05
Roller arm bolts, with nuts, Weight 1 oz.	.20
Springs for ball bearing device, No. 4 Wt. 1 oz.	.40
Metallic sleeve for ball bearing device, No. 58	.60
Hyatt roller bearing for drive wheel No. 16864	.10
Steel thimble or ferrule No. CC, Weight 1 oz.	.20
Steel housing or cup No. C, Weight 2 oz.	

MORHAND OR PERFECTION



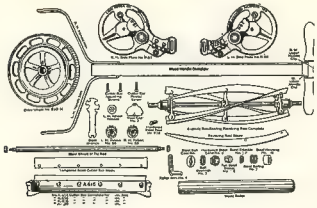
Each

Drive wheel, No. 78-10, Weight 7 Lbs.	$ 1.75
Right side plate, No. 81, Weight 4½ Lbs.	1.65
Left side plate, No. 82, Weight 4½ Lbs.	1.65
Reel, 5 blades, complete (state size of mower and cutter bar number).	
14 in.	6.50
16 in.	7.00
18 in.	8.00
Cutter bar complete, with steel blade (state size wanted Give number appearing on cutter bar).	
A614-14 in.	1.65
A616-16 in.	1.75
A618-18 in.	1.85
Cutter bar blade only (state cutter bar No. A.l sizes	.50
Handle irons (both sides alike) state size of mower, All sizes, Per Pair	.60
Wood roller (state size wanted) All sizes	.50
Pinion, Right No. 55, Left No. 66	.25
Roller arms No. 4, both sides alike (state whether roller arms wanted are for rollers with pins in end or for rollers with merely holes in ends)	.20
Wheel washers No. L. W., both sides alike	.10
Cones, No. 2, both sides alike	.40
Pinion cap, No. 3, both sides alike	.10
Hardened steel pawls, No. 916, both sides alike. (State side plate number)	.10
Ball bearing case, No. 1, both sides alike	.40
Ball retainer, No. 27, both sides alike with balls (Extra balls, 5c each)	.40
Cutter bar adjusting screws	.05
Cutter bar pivotal screws	.05
Roller arm bolts, with nuts	.05
Shrub rod nuts	.05
Handle iron bolts, with nuts	.10
Handle grip joint bolts, with nut	.10
Wheel bolts	.05
Upper handle cap, No. RW	.10
Lower handle cap, No. W	.20
Wood handle, complete	1.00
Wrench	.10
No. 4 Springs for ball bearing device	.20
Steel housing, No. A	.20

LAWN MOWER REPAIRS

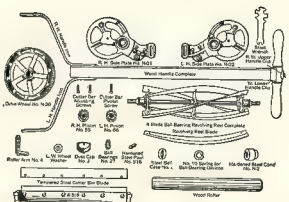
F. & N. LAWN MOWERS

JEFFERSON OR FAIRLAWN



	Each
Drive wheel, No. 88-10, Weight 7 Lbs.	$ 1.75
Right side plate, No. 81, Weight 4½ Lbs.	1.65
Left side plate, No. 82, Weight 4½ Lbs.	1.65
Reel, 4 blades complete, (state size of mower and cutter bar number)	
14 in.	5.00
16 in.	6.00
18 in.	7.00
Cutter bar complete with steel blade. (State size wanted and give number appearing on cutter bar.	
A614-14 in.	1.60
A616-16 in.	1.75
A618-18 in.	1.85
Cutter bar blade only. (State size and cutter bar number). All sizes	.50
Handle irons, (both sides alike.) State size of mower. All sizes Per Pair	.60
Wood roller (state size wanted). All sizes	.50
Pinion, Right No. 55, Left No. 66	.25
Roller arms, No. 4, both sides alike (State whether roller arms wanted are for rollers with pins in end or for rollers with merely holes in ends)	.20
Wheel washers, No. L. W., both sides alike	.10
Cones, No. 2, both sides alike	.40
Pinion cap, No. J, both sides alike	.10
Hardened Steel Pawls, No. 916, both sides alike. (State Side Plate number)	.10
Ball Bearing Case, No. 1, both sides alike	.40
Ball Retainer, No. 27, both sides alike, with balls (Extra Balls, 5c each)	.40
Cutter Bar Adjusting Screws	.05
Cutter Bar Pivotal Screws	.05
Roller Arm Bolts, with nuts	.05
Shrub Rod Nuts	.05
Handle Iron Bolts, with nuts	.05
Handle Grip Joint Bolt, with nut	.10
Wheel Bolts	.05
Upper Handle Cap	.10
Lower Handle Cap	.20
Wood handle, complete	1.00
Wrench	.10
No. 4 Springs for Ball Bearing device	.20
Steel Housing No. A	.20

RELIABLE OR PARAGON



	Each
Drive wheel, No. J-20	$ 1.00
Right side plate, No. J-01	1.50
Left side plate, No. J-02	1.50
Reel, 4 blades complete. (State size of mower and cutter bar number)	
12 in.	4.25
14 in.	4.50
16 in.	4.75
Cutter Bar complete with steel blade. (State size wanted and give number appearing on cutter bar.	
A512-12 in.	1.65
A514-14 in.	1.65
A516-16 in.	1.75
Cutter Bar Blade only. (State size and give cutter bar number). All sizes	.50
Handle irons. State size of mower. All sizes per Pair	.60
Wood Roller (State size wanted.) All sizes	.50
Pinion, Right No. 55, Left No. 66	.25
Roller arms, No. 4, both sides alike (State whether Roller Arms wanted are for rollers with pins in end or for rollers with merely holes in ends)	.20
Wheel Washers No. L. W., both sides alike	.10
Cones, No. 2, both sides alike	.40
Pinion Cap, No. J, both sides alike	.10
Hardened Steel Pawls No. 916, both sides alike. (State Side Plate number)	.10
Ball Bearing Case No. 1, both sides alike	.40
Ball Retainer, No. 27, both sides alike, with balls (Extra Balls, 5c each)	.40
Cutter Bar Adjusting Screws	.05
Cutter Bar Pivotal Screws	.05
Roller Arm Bolts, with nuts	.05
Handle Iron Bolts, with nuts	.05
Handle Grip Joint Bolt, with nut	.10
Wheel Bolts	.05
Shrub Rod Nuts	.10
Upper Handle Cap	.10
Lower Handle Cap	.20
Wood handle, complete	1.00
Wrench	.10
No. 4 Springs for Ball Bearing device	.20
Steel Housing No. A	.20

FISHING TACKLE

FISHING IN ALABAMA—1941-1942

Kind	No Closed Season	Minimum Length	Daily Creel Limit
Wall-Eyed Pike (Jack Salmon)		12 "	10 Fist
Bass, (Trout or Green Trout)		11 "	10 Fish
White Lake Bass (Striped Bass)		10 "	15 Fish
Crappie or White Perch		8 "	15 Fish
Bream in aggregate of all kinds		4½"	25 Fish
Rock Bass or Goggle-Eye		4½"	15 Fish

NOTE:—All fish measured from tip of nose to fork of tail. Not more than 35 in aggregate of all species of game fish taken in one day. Game fish cannot be used for bait, nor caught by other than ordinary hook and line, fly, troll or spinner. Sale of all game fish, regardless of where caught, prohibited in Alabama.

LICENSES:—Non-resident annual, $5.00; non-resident trip (seven days) $2.00. Resident, $1.00. Resident over 16 years of age using rod and reel or artificial bait, lure or fly in public streams and bodies of water in which fresh water fish appear required to have license. All non-residents, regardless of method of fishing, must have a license.

To the best of our knowledge the above information is correct To be doubly sure consult your local authorities.

★J -1 EM

HEDDON MINNOWS

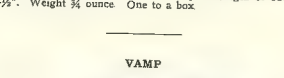
SWIMMING JOINTED VAMP

Series No. 7300 — $18.00 Doz.

No.	Colors
7301	—Rainbow
7302	—White body, red head
7309-D	—Green scale
7309-M	—Pike scale
7309-P	—Shiner scale
7309-RH	—White body, silver specks, red head

Jointed feature of this bait gives entirely new movement and provides additional luring. Dives, swims and floats when at rest, same as all other Vamps. Length of body 4½". Weight ¾ ounce. One to a box.

VAMP



Series No. 7500 — $15.84 Doz.

No.	Colors
7500-S	—White body, red and green spots
7501	—Rainbow
7502	—White body, red eyes and tail
7509-D	—Green scale
7509-M	—Pike
7509-P	—Shiner scale
7509-R	—Natural scale
7509-SS	—Silver scale

Especially beautiful and deceptive in finish. Attractive diving-swimming movements. A head liner for all fish. Consistently increasing demand proves this a real fish-getter. Body length 4½". Weight ⅜ ounce. One to a box.

MIDGET RIVER RUNT

Heddon "Midget River-Runt-Spook"

No. 9010 Series

Series No. 9010 — $15.84 Doz.

No.	Colors
9010-S	—Spotted
9012	—White and Red
9012 XS	—White and red Shore
9019-D	—Green scale
9019-L	—Yellow Perch
9019-M	—Pike
9019-SH	—Silver Herring
9019-RH	—Silver Flitter, red head
9019.SHAD	—Shad Minnow
9019-XBW	—Black and white shore
9019-XGF	—Green Fish shore minnow
9019-XRG	—Green Shore
9019-XRS	—Silver shore
9019-XRY	—Yellow Shore

Newest of the "Runts", ideal for a very light rod and line. The smallest of the River Runt family. Sinks slowly and swims lively. Length 2¼". Weight ⅜ ounce.

★K—1—EM

RIVER RUNT

Heddon "River-Runt Spook"

No. 9110 Series

A small, compact, lively lure for light rods. Very effective for river fishing, particularly for Small Mouth Bass and Wall-eyed Pike, and equally good in other waters for all game fish. A slow-sinking bait with attractive wiggling motion. Regularly equipped with two sets of treble hooks. Length Another "Fish-flesh" Bait Transparent with Indestructible Finish ⅝". Weight about ½ oz. One to a box.

Series No. 9110 — $15.84 Doz.

No.	Colors
9110-S	—Spotted
9111	—Rainbow
9112	—White and red
9112-XS	—White and red shore minnow
9119 D	—Green scale
9119-L	—Yellow Perch
9119-M	—Pike
9119-N	—Dace scale
9119-P	—Shiner scale
9119-R	—Natural scale
9119-RH	—Silver flitter, red head
9119-SS	—Silver scale
9119-XGF	—Green fish shore
9119-XRS	—Silver shore
9119-SHAD	—Shad minnow
9119-XRY	—Yellow shore
9129-XRG	—Green shore
9119-XBW	—Black & white shore

GO-DEEPER RIVER RUNT

Heddon "Go-Deeper-Runt"

No. D-9110 Series

Series No. D 9110 — $16.56 Doz.

No.	Colors
D 9111	—Rainbow
D 9112	—White, red head
D-9112-XS	—White and red shore minnow
D-9119-D	—Green head
D-9119-M	—Pike
D-9119-N	—Dace scale
D-9119-XRS	—Silver shore

This is a bait that goes deep for the lazy big one. Extra big tip spoon makes it dive to the bottom even in 15 to 20 feet of water. Combines metal spoon and minnow body Length over-all 3½". Weight 3/5 ounce, Two trebles.

NO-SNAG RIVER RUNT

Heddon "No-Snag-River-Runt-Spook"

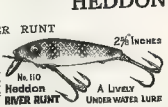
Series No. N-9110 — $19.44 Doz.

No.	Colors
N-9110-S	—Spotted
N-9111	—Rainbow
N 9112	—White and red
N-9112-XS	—Red and white shore minnow
N-9119-L	—Yellow Perch
N-9119-N	—Dace scale
N-9119-P	—Shiner scale
N-9119-R	—Natural scale
N-9119-XRG	—Green shore
N-9119-XRS	—Silver shore
N-9119-XRY	—Yellow shore

Fills a need for snagless and weedless bait that is a sure "hooker and holder." Now those very tough weedy places can be fished without a "hang-up". The front of bait is protected by a twin guard, and both of the points of the double hook are protected by a guard. The body is the famous River-Runt Spook, equipped with one double hooks, and with the famous River-Runt action. Length 2½ inches. Weight ⅝ oz.

HEDDON MINNOWS

RIVER RUNT



Small, compact, lively lure for light rods; effective for river fishing particularly small-mouth bass. Slow-sinking bait with wiggling motion. Two sets treble hooks. Length 2⅝". Wt. about ½ ounce. One to a box.

$12.24 Doz.

Series No. 110

No.	Color
111	Rainbow
112	White and Red
114	All Red
119-D	Green Scale
119-L	Yellow Perch Scale
119-M	Pike Scale
119-N	Dace Scale
119-P	Shiner Scale
119-R	Natural Scale
119-RH	White Body, Silver Speck, Red Head
119-XRG	Green Shore
119-XRS	Silver Shore

HEDDON MIDGET DIGIT

$12.24 Doz.

Series No. B-110

No.	Color
B-112	White and Red
B-112-XS	Red and White Shore
B-119-L	Yellow Perch Scale
B-119-N	Red Dace Scale
B-119-P	Shiner Scale
B-119-PLB	Pearl
B-119-RH	Silver Flitter, Red Head
B-119-SS	Silver Scale
B-119-XBW	Black and White Shore
B-119-XRY	Yellow Shore

The Midget Digit is made especially for light, whippy rods. Every fisherman should have one of these baits in his tackle box. It's just the thing for bass, perch or crappie. A fast sinker with lively swimming action. Length 1¼", weight only 2/5 of an ounce yet it casts easily. Two No. 5 size treble hooks.

TORPEDO UNDERWATER

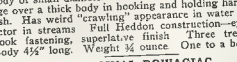
$15.84 Doz.

Series No. 130

No.	Color
130	Fancy Green Back
131	Rainbow
132	White, Red Head and Tail
139-D	Green Scale
139-M	Pike Scale

These Torpedo Lures are sinking minnows with long body of small diameter—believed by many to be an advantage over a thick body in hooking and holding hard-mouthed fish. Has weird "crawling" appearance in water and is fine actor in streams. Full Heddon construction—eyes, patent hook fastening, superlative finish. Three treble hooks. Body 4½" long. Weight ¾ ounce. One to a box.

ORIGINAL DOWAGIAC



$18.00 Doz.

Series No. 150

No.	Colors
150	Fancy green back, white belly
151	Rainbow
152	White body, red head and tail
159-B	Frog
159-D	Green Scale
159-J	Frog Scale

The 150 series has five treble hooks, weighs ¾ ounces and body is 3¾" long. Sinking minnow. One to a box.

PUNKIN SEED BAIT

$15.84 Doz.

Series No. 740

No.	Colors
740-CRA	Crappie
740-ROB	Rock Bass
740-SHA	Shad
740-XBW	Black and White Shore
740-XRS	Silver Shore
740-XRY	Yellow Shore
740-XSK	Goldfish Shore
742-XS	Red and White Shore

The Heddon Punkin-Seed Bait is just like a baby Blue Gill, baby Crappie or other small "pan fish." Floats with back out of the water, rocks back and forth; dives and swims. Fools those wise ones that refuse other lures. Length 2½". Weight ⅝ oz. 2 Treble Hooks.

CRAZY CRAWLER

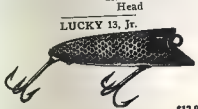
This is one of Heddon's newest baits. It is strictly a surface lure and has a bouyant body equipped with two metal "arms" or "wings" which give it the crawling action. It rolls from side to side and leaves a wide wake of bubbles. It operates easily and automatically at slow or fast speeds. 2¼" long. Weight 3/5 ounce.

$19.44 Doz.

Series No. 2120

No.	Colors
2120-BF	Bull Frog
2120-GM	Grey Mouse
2120-GW	Glow Worm Luminous
2120-XBW	Black & White Shore Minnow
2120-XRS	Silver Shore Minnow
2120-XRY	Yellow Shore Minnow
2120-YRH	Yellow & Red Head

LUCKY 13, Jr.



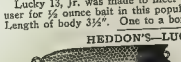
$12.96 Doz.

Series No. 2400

No.	Colors
2402	White with red head
2409-JRH	Frog scale, red head
2409-PRH	Shiner scale, red head
2409-D	Green scale

Lucky 13, Jr. was made to meet the demand of light rod user for ½ ounce bait in this popular type. Weighs ½ oz. Length of body 3½". One to a box.

HEDDON'S LUCKY 13



This is the bait which through sheer merit, has kept its place among the popular lures, a floating minnow drawing slightly below the surface with Zig-Zagging swimming movement, body length 4 inches, weight ⅝ ounce. One to a box.

$15.84 Doz.

Series No. 2500

No.	Colors
2500-S	White Body Spotted
2502	White with red head
2509-D	Green scale, red head
2509-PRH	Shiner scale, red head
2509-JRH	Frog scale, red head
2509-M	Pike scale

SOFT BALL BATS

HILLERICH AND BRADSBY CO.

No. 27 **$ .56 Each**

Made of hickory, dark brown finish, black taped handle. Lengths 33 and 34 inches. Two doz. to carton. Weight 40 pounds.

No. SB-50—Morhand **$ .60 Each**

Made of ash, pecan brown finish with white tape grip, length 33 and 34". 2 doz. to carton. Weight 40 pounds.

No. SB-75—Morhand **$1.00 Each**

Made of hickory, light brown finish, with flock grip, length 33 and 34". 2 doz. to carton. Weight 40 pounds.

No. 54-H **$1.54 Each**

Made of Hickory, light brown finish with Zapon, assorted models, length 33 and 34 inches. 2 doz. to carton. Shipping weight 40 pounds.

No. SB-100—Morhand **$1.30 Each**

Official, made of ash, natural finish, flock grip. Length 33 and 34". One doz. to carton. Weight 23 pounds

No. 101 **$1.90 Each**

Official Slugger, natural white finish, made of ash, Cork grip. Length 33 and 34 inches. One doz. to carton. Weight 23 pounds

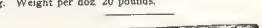
No. 102-HB **$1.90 Each**

Made of hackberry, dark brown finish, new bottle shape, length 33" and 34". One doz. to carton. Weight 23 lbs.

FUNGO BATS

No. 43 **$3.30 Each**

Lousiville Slugger's Fungo—Powerized, bone rubbed, light brown finish, branded outfield on barrel end. Length 38 inches Packed in cartons of one doz. Each bat in paper bag. Weight per doz 20 pounds.



No. 24 **$1.40 Each**

Willow Infield Fungo, golden finish, with flame burnt handle, made of willow, a light wood, for Fungo Hitting only Lengths 34 to 36 inches. One doz. in carton. Weight per doz. 20 pounds.

BASEBALL ACCESSORIES

BAT BAG

No. 72 **$8.00 Each**

Club Bat Bag will hold 12 bats, made of heavy duck, reinforced leather ends with leather carrying handles. Weight 2½ lbs. each.

No. 73 **$13.50 Each**

Same as No. 72 except will hold 24 bats. Weight 3½ pounds each.

SOFTBALL BAT BAG

No. JP **$23.00 Doz.**

Made of 21 oz. double filled canvas, with canvas bottom and grommeted top, with heavy draw rope, will hold 6 bats. Weight each 1¼ pounds.

CARRY ALL BAG

No. 60 **$3.60 Each**

Made of extra heavy gray hose duck with zipper opening at top, built-up solid ends. Heavy can vas handles Over-all length 17". An ideal bag for golf togs, also as a general purpose bag. Wt. each 2 pounds.

UTILITY CARRY ALL BAG

No. 1 **$3.60 Each**

Brown Duck with 20" Zipper opening on side and padlock. Canvas handle braded on. Bag is cylindrical in shape measuring 36" long by 12" across end. Well made and suitable for use in carrying equipment for baseball, softball, football or basketball teams Weight each 1 pound.

SAV-A-LEG HOME PLATE

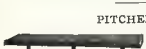
No. 3385 **$11.50 Each**

The New Sav-A-Leg Home Plate, invented by John O. Seys, Chicago Cubs, and adopted by the National League. Every season sees player's legs broken and their ankles sprained as a result of sliding and catching their spikes on the edge of the old-style home plate. The New Sav-A-Leg Home Plate, which is beveled apron of black rubber, prevents such accidents because the spikes slide up and over the plate instead of being checked adruptly against the edge. Weight each 18 pounds.

No. 3381 **$9.20 Each**

Rubber Home Plate, best grade white rubber, regulation size and shape, 8½x17x¾" thick, 5 spikes. Weight each 17½ pounds.

PITCHERS PLATE



No. 3380 **$6.80 Each**

Rubber Pitcher's Plate, best grade white rubber, regulation size 24x6x¾" thick, complete with 3 lugs and steel spikes. Weight each 10½ pounds.

SAWS

KEYSTONE ASSORTMENT

No. K **$25.60 Asst.**

Consist of 12 Disston Keystone Hand Saws with Advertising Material, Retail Price Tags on all Saws

Qty.	No.		Length	Point	Retail Each
1	K-1	Leader	26"	8	*$1.00*
1	K-2	Speedster	26"	8	*1.25*
4	K-3	Pacemaker	26"	8	*1.50*
2	K-3	Pacemaker	20"	9	*1.25*
1	K-4	Airmaster	26"	8	*1.75*
1	K-5	Defender	26"	8	*2.00*
1	K-6½	Challenge	26"	8	*2.35*
1	K-6½	Challenge	20"	9	*2.35*

Includes attractive black lacquered finish wood stand with legs slotted to hold 3 saws on each side. Has yellow and black card 19¼x7½" at top of stand and 2 "outstanding value" cards across bottom, one on each side. These 3 cards lock the stand together making a rigid and most attractive display. Weight 24 pounds

WOOD SAWS

No. 514 **$28.80 Doz.**

Selected hardwood frame, rounded corners, single riveted, enameled red Japanned heavy steel "Jumbo" Rod with malleable iron turn back buckle, ends extra riveted, carefully threaded, with 30 inch blued silver steel blade, hand filed, breasted on tooth edge, plain tooth. Weight per doz. 58 lbs. ½ doz. in a box, knocked down.

DISSTON PRUNING SAW

No.	Length	Packed Box	Wt. Doz.	Doz.
5	18"	½ Doz.	12 lbs.	$28.00

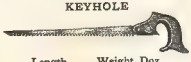
This saw is toothed on both edges and blade tapers from handle to point. Convex edge has 8 point cross teeth to cut on push stroke; concave edge is toothed 7 points to cut on draw stroke. Hardwood handle, weather-proof finish with three rivets.

NEST OF SAWS

No. 5 **$21.40 Doz. Sets**

We recommend this set for general purposes; made of best steel. It consists of a 10 inch keyhole and a 14 inch compass saw blade and adjustable handle.
Packed ¼ Doz. to Box. Weight Per Doz. 12 Lbs.

KEYHOLE



No.	Length	Weight Doz.	Doz.
6	12"	4½ lbs.	$9.20

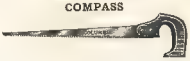
Best grade steel, Applewood handle, varnished and polished edges. Saw Screw and Medallion. 10 teeth per inch.
Half Dozen to the Box.

KEYHOLE

No.	Length	Weight Doz.	Doz.
12	10"	4 lbs.	$5.80
12	12"	4½ lbs.	5.80

Good grade steel. Beech handle, varnished edges, two wood screws. 10 teeth per inch. Half Doz. to the Box.

COMPASS



No.	Length	Weight Doz.	Doz.
10S-12"	12"	6 lbs.	$4.80
10S-14"	14"	7 lbs.	5.40

Polished wood screws, beech handle, varnished edges. Good quality steel. 8 points per inch.
Half Dozen to the Box.

SLOTTED EXTRA BLADES

14" Compass	$4.00 Doz.
10" Keyhole	3.00 Doz.

Will Fit All Types.

SAW SCREWS

No. 1 **$ .60 Doz.**

Half inch Oval head, nickel finish.
Weight per doz. 4 ozs.

No. 20 **$1.20 Doz.**

One Inch Eagle Medallion.

Weight per doz. 6 ozs.

Dolls and new clothes for old dolls

G 17-in. Outdoor Baby with Crying Voice. Dressed in pink cotton flannel snowsuit, pecked brownie cap edged with marabou. White cotton socks; white shoes. Metal sleeping eyes. Hair molded and painted on. Composition head, arms, legs. Cotton stuffed body.
48 T 2421—Outdoor Baby Doll. Ship. wt. 2 lbs. 8 oz. . $1.59

H 13½-in. Girl Doll. All composition. Painted eyes, hair. Cotton dress; diaper; white socks, slippers.
48 T 2486—13½-in. Girl Doll. Ship. wt. 1 lb. 4 oz. . . . 99c

J 10-in. Kinky. All composition. Painted eyes. Cotton print dress; matching diaper; white cotton socks.
48 T 2462—10-in. Kinky. Ship. wt. 1 lb. 45c

K 10-in. Baby Doll. All composition. Painted eyes, hair. Wears cotton dress, bonnet, 1-pc. undy and socks.
48 T 2463—10-in. Baby Doll. Ship. wt. 1 lb. 45c

L 12½-in. Snow Baby Wears 3-Pc. Red Duvetyn Snowsuit. Socks, shoes. All composition. Painted eyes, hair.
48 T 2545—12½-in. Snow Baby. Ship. wt. 1 lb. 10 oz. . 89c

Dolls' Snow Suits . . . 10-Piece Wardrobe for Girl Dolls

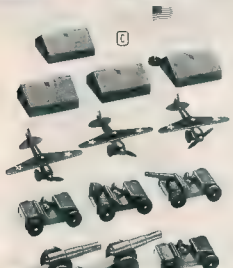
M Snow Suits for Baby Dolls. Pink or Blue cotton flannel. (Will send whichever color is available.) Styles like or similar to one shown. 4 Sizes fit dolls 12 to 18 in.
48 T 2353—Size Height of Doll. Ship. wt. 14 oz. 95c

N Snow Suits for Girl Dolls. Pink cotton flannel ski pants, jacket, attached hood. 5 Sizes to fit dolls from 12 to 20 in. Measure doll from feet to top of head.
48 T 2349—Size Height of Doll. Ship. wt. 1 lb. . . . $1.00

P 10-Pc. Outfit

P 10-Pc. Doll Wardrobe. Cotton slacks and halter. White blouse, polka-dot wrap-around skirt. Printed percale and organdy dress, lace trimmed; matching bonnet. White panty, Three hangers. Boxed. Ship. wt. 1 lb.
48 T 2344—For 12 to 13½-in. Dolls. 89c
48 T 2345—For 14 to 15-in Dolls. 95c
48 T 2348—For 16 to 17-in. Dolls. $1.00
48 T 2347—For 18 to 19-in. Dolls. 1.15
48 T 2346—For 20 to 21-in. Dolls. 1.22

Art and handcraft sets ... for



(A) MODELING CLAY for beginners or experienced amateur sculptors. Soft and pliable. Model figures . . . make ashtrays, bookends. Can be used over and over again, or fired in bake-oven for permanency. (Not suitable for making vessels to hold water).
49 T 566—Shipping weight 5 lbs. 8 oz. per 5-lb. can. One 5-lb. can 49c; Two cans for 93c, Three for . .$1.33

(AA) MODELING TOOLS. Double-end tool cuts away excess clay; sharp tool outlines designs; curved tool shapes curves; toothed tool roughens surface.
49 T 582—4 Polished Boxwood Tools. Wt. 6 oz 98c

(B) SET OF 4 WEAVING LOOMS. A handcraft enjoyed by young and old. You can make almost any piece of clothing with these square and oblong looms . . . mufflers, afghans, baby garments. There are directions for making fancy stitches and lovely designs with colored yarns. Four stationery wood frames weave 2¼-in. and 4½-in. squares; 2½ by 4½-in. and 2½ by 8½-in. oblong pieces. Easily stitched together to make garments. Book of instructions and two metal needles included. For yarns, see Page 648, Wards General Catalog. Yarn and finished garments are not included.
49 T 976—Set of 4 looms. Ship. wt. 1 lb. 87c

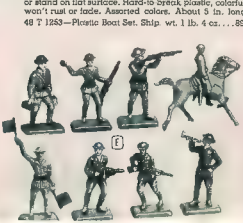
Small Wood and Plastic Toys . . . Jeeps and Planes, Boats, Soldiers, Cowboys and Indians

(C) MIDGIE MOBILE ARMY SET. Tiny models of mechanized army equipment . . 2 jeeps, searchlight truck, tank destroyer, 3 planes, 2 cannons . . . 2 to 3½ in long. Made of wood, painted olive drab. 4 tents, flag.
49 T 1236—Midgie Army Set. Ship. wt. 1 lb. 98c

(D) FLOATING PLASTIC BOATS. Battleships, Submarines, Troop Transport, etc. . . . convoy of 8 boats to float or stand on flat surface. Hard-to break plastic, colorful, won't rust or fade. Assorted colors. About 5 in. long
49 T 1283—Plastic Boat Set. Ship. wt. 1 lb. 4 oz. . . .89c

(E) PLASTIC SOLDIERS. 8 plastic soldiers in battle poses . . . . one on horseback About 3 in. tall. Hand-painted in realistic colors. Resist breakage. Packed in cardboard fort, 20 in. long by 5 in. wide.
49 T 1234—Plastic Soldier Set. Wt. 1 lb. 4 oz . 89c

(F) PLASTIC COWBOYS AND INDIANS. 8 plastic Cowboys and Indians ready for battle. About 3 in. tall. Hand-painted in realistic colors. Resist breakage. Packed in cardboard stockade, 20 in. long by 5 in. wide
49 T 1235 Cowboys and Indians. Wt. 1 lb. 4 oz.. 89c



CROSS CUT SAWS

SIMONDS CRESCENT GROUND

No.	Length Feet	Width at Center	Width at Ends	Gauge on Teeth	Each
22	6	7 "	3¾"	14	$13.90

Gauge on Back Center 20.

Lance Tooth Four Cutters to each Raker.

SIMONDS CRESCENT GROUND FELLING

No.	Length Feet	Width at Center	Width at Ends	Gauge on Teeth	Each
325	5	4½"	3¼"	14	$10.60
325	5½	4⅝"	3¼"	14	11.90
325	6	4½"	3¼"	14	13.90

Gauge on Back Center 17

Lance Tooth Four Cutting Teeth to each Raker

SIMONDS CRESCENT GROUND

No.	Length Feet	Width at Center	Width at Ends	Gauge on Teeth	Each
324	5	5⅛"	3¼"	15	$10.60
324	5½	5¼"	3¼"	14	11.90
324	6	5⅜"	3¼"	14	13.90
324	6½	6¼"	3¼"	14	16.00

Gauge on Back Center 5, 5½, 20—6, 6½, 19.
Four Perforated Lance Teeth to each Raker.

SIMONDS CRESCENT GROUND

No.	Length Feet	Width at Center	Width at Ends	Gauge on Teeth	Each
133	5½	5½"	3¾"	14	$11.90
133	6	5¾"	3⅞"	14	13.90

Gauge on Back Center 5½, 6 ft. 19

Four Perforated Lance Teeth to each Raker

SIMONDS

No.	Length Feet	Width at Center	Width at Ends	Gauge on Teeth	Each
214	5	3¼"	3¼"	16	$ 5.50
214	5½	3⅜"	3¼"	15	6.10
214	6	3⅜"	3¼"	15	6.80

Gauge on Back Center Flat.

Four Perforated Lance Teeth to each Raker

Average weight above Saws 5½ lbs. All packed 25 to a case.

No.	Size	Each
0214	5 ft.	$6.20
0214	5½ ft.	6.90
0214	6 ft.	7.50

These are same as 214 saws except ground two gauges thinner on back.

"AMERICA'S BEST"

Our America's Best Saws are of highest quality and give most excellent service under normal conditions, guaranteed against defective workmanship and material. Perforated Lance tooth. Four cutting teeth to one raker.

Wide

No.	Length	Width at Center	Width at Ends	Each
AB600	5½ ft.	5½ in.	3 in.	$6.80
AB600	6 ft.	5¾ in.	3 in.	7.50

14 Gauge at tooth end, 16 gauge on back end and 18 gauge on back center. Each saw individually packed in cardboard carton. Average weight 5½ lbs. each.

Narrow

No.	Length	Width at Center	Width at End	Each
AB300	5½ ft.	4⅝"	3¼"	$6.80
AB300	6 ft.	4½"	3¼"	7.50

14 Gauge on tooth, 17 gauge on back center. Each saw individually packed in cardboard carton. Average weight 5 lbs. each.

Extra Narrow

No.	Length	Weight	Each
AB-200	5 ft.	3½ lbs.	$4.40
AB-200	5½ ft.	4 lbs.	5.00

SIMILAR TO SIMONDS 214

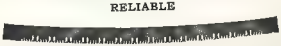
14 Gauge, width at ends and center 3½". Each saw individually packed in cardboard carton.

PERFORATED LANCE TOOTH "AMERICA'S BEST—ONE MAN

No.	Length	Weight	Each
AB100	3 ft.	3½ lbs.	$4.40
AB100	3½ ft.	4 lbs.	5.10
AB100	4 ft.	5 lbs.	5.70
AB100	4½ ft.	6 lbs.	6.50

High grade crucible steel, polished and etched, hand filed and set, beechwood handle, brass screws, complete with supplementary handle.

PERFORATED LANCE TOOTH RELIABLE



No.	Length	Weight	Each
RN	5 ft.	3½ lbs.	$4.00
RN	5½ ft.	4 lbs.	4.30

14 gauge, highest grade crucible steel, polished and etched, uniform temper. Width at ends and center 3½".

LAWN MOWERS AND GRASS CATCHERS

YARD-MAN MOWERS

No.	Size	Weight	Each	List
Yard-Man	14″	35 lbs.	**$21.00**	*$25.45*
Yard-Man	16″	37 lbs.	**21.50**	*15.95*
Yard-Man	18″	39 lbs.	**23.00**	*16.95*
Yard-Man	21″	42 lbs.	**27.50**	*19.95*

SPECIFICATIONS

Reel—5 tool steel blades scientifically oil tempered. Uniformly hardened by a special process so they will grind sharp and stay sharp. Stamped steel spiders electrically welded to a husky ¾″ cold rolled shaft thus making a solid, rigid, truss construction. A reel of unusual strength.

Ball Bearings—The finest annular type non-adjustable bearings possible to obtain. Made of Chrome Nickel Steel hardened and ground with Grade A Alloy steel balls Grease packed and so installed, the lubricant stays in and the dust stays out.

Cutter Bar—Single piece. Finest quality High Carbon Tool Steel oil tempered and drawn to the ideal point for this service. Raised lip design.

Adjustment—Micrometer type located outside of frame. Made with a common wrench. Simple, accurate, positive.

Frame—Stamped from one piece Carbon Steel with ribbed edges which prevent bending or springing Tubular cross member lighter and stronger than solid rod. Flanged ends electrically welded to tube.

Painting—The paint on every Yard-Man is baked on according to the very latest practice in the automotive factories. We know of no better way to do a more excellent paint job than is done on the Silent Yard-Man.

Wheels and Pinions—Ground wheels. Close grain semi-steel from master patterns of unusual accuracy. Machined to same dimensional limits as used in automotive practice. Practically noiseless.

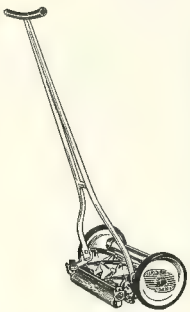
Dust Proofing—Unusual pains have been taken to dust proof of all wearing parts Keeping the dust out will keep the oil in.

Tires—Rubber tires are made of special analysis "age resisting" rubber of an exceptional tough nature to withstand wear incident to this service. Design of the tread is such as to give maximum traction and the smoothest operation under all conditions.

REPAIRS FOR YARDMAN

No.	Part	Each	List
225	R. H. Pinions	$ .65	$ .50
228	L. H. Pinions	.65	.50
223	Pawls	.15	.10

CLEMSON MOWER



Finished in heavy chrome plated and baked enamel. Roller bearing wheels. Precision ball bearing, double grease sealed in at factory for reel blade shaft. Oilless bearing bushings in roller. No oil holes, and no oiling or greasing during the life of the mower. Tires are rubber with special star shaped tread to give best traction.

F. O. B. Middleton, N. Y.

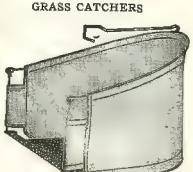
No.	Size	Weight	Each	List
Clemson	17″	32 lbs.	**$40.00**	*$29.95*

RUBBER TIRES

No. 118 **$1.00 Pair**

Slip-on Tires which will fit any lawn mower having 10″ flat type wheels Packed bulk. Average weight 1 pound

GRASS CATCHERS



No.	Wt. Doz.	Doz.
140	41 lbs. (For 12 to 16″ Mowers)	$12.50
145	51 lbs. (For 16 to 20″ Mowers)	15.50

Made of heavy white 6 oz. duck, heavy galvanized iron roller flanged bottom, which is so made that when the catcher is attached directly over the roller of the mower, grass will slide backard to lower level of catcher. Adjustable galvanized steel hooks which will fit any make mower. Packed 1 doz. to case.

LAWN MOWERS

PARKWAY

Rubber Tired

No.	Size	Weight	Each
Parkway	16″	43 lbs.	$17.00
Parkway	18″	45 lbs.	18.50

10¾″ Wheels—Semi-Pneumatic Rubber Tires

SPECIFICATIONS

Self-adjusting, ball-bearing assembly. Closed wheel construction, with brightly polished ornamental disc. Cutting reel, 5 blades.

Special cutter bar—raised rolled edge.

Rubber roller.

Finish:—Cream, trimmed in red and green.

Alloy Steel Cutting Unit.

The new modern Parkway lawn mower with semi-pneumatic tires is ideal for any size lawn. The rubber tires quiet ground noises while affording perfect traction New in design, smartly styled, the Parkway is the leader of precision built profit makers.

CLIPPER—MOR-CUT—FLYER

Rubber Tired

No.	Size	Weight	Each
Clipper	16″	42 lbs.	$ 9.50
Clipper	18″	44 lbs.	10.10
Mor-Cut	16″	42 lbs.	9.50
Mor-Cut	18″	44 lbs.	10.10
Flyer	16″	42 lbs.	9.80
Flyer	18″	44 lbs.	10.10

These are all the same type mower except branded different.

SPECIFICATIONS

Self-adjusting ball-bearing assembly. Solid rubber tires, 10″ overall diameter. Open wheel construction.

Cutting reel—5 blades, three spiders.

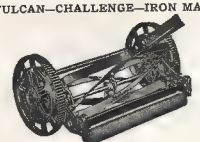
Finish:—Gold body with blue trim.

Special cutter bar—raised, rolled edge.

Alloy Steel Cutting Unit.

The precision built Clipper Lawn Mower is rugged, easy to handle and attractively finished. The rubber tires quiet ground noises and protects trees and lawn shrubbery.

VULCAN—CHALLENGE—IRON MAN



No.	Size	Weight	With Rubber Tires Each	Less Rubber Tires Each
Vulcan	16″	41 lbs.	$9.20	$8.20
Vulcan	18″	43 lbs.	9.70	8.70

Also available in same mowers branded Challenge or Iron Man. Specify brand wanted.

Furnished without rubber tires unless specified

SPECIFICATIONS

Self-adjusting ball-bearing assembly. 10″ wheel.

5 Blade Cutting Reel. Finish: Gold body with blue trim.

Special cutter bar—raised, rolled edge. Alloy Steel Cutting Unit.

The greatest value ever offered in a Lawn Mower. It is rugged, evenly balanced, quick cutting and attractively finished. A product that will give years of satisfactory performance.

When sold with rubber tires, Mower and tires are shipped separate.

SAMSON—THOR—BANNER

Same as Vulcan, Challenge and Iron Man except has four cutting blades instead of five. Gold body, red and green trim.

No.	Size	Weight	With Rubber Tires Each	Less Rubber Tires Each
Samson	14″	39 lbs.	$8.70	$7.70

Also available in same mowers branded Thor or Banner. Specify brand wanted.

Furnished without Rubber Tires unless specified

WARRIOR—VICTOR—WINNER

No.	Size	Weight	Each
Warrior	12″	34 lbs.	$7.20
Warrior	14″	35 lbs.	7.40
Warrior	16″	36 lbs.	8.00

Also available in same mowers branded "Victor" or "Winner" at same price. Specify brand wanted.

SPECIFICATIONS

Self-adjusting ball-bearing assembly, 8″ wheel.

4 Blade Cutting Reel. Finish: Gold body with green and red trim.

Special cutter bar—raised, rolled edge. Alloy Steel Cutting Unit.

A small mower patterened after the larger models. It is especially built for those who want first-class lawn mower performance and a small mower.

POPLAR—CHAMPION

No.	Size	Weight	Each
Poplar	12″	32 lbs.	$6.50
Champion	12″	32 lbs.	6.50

SPECIFICATIONS

8-inch wheel. 3 Blade cutting reel.

Finish:—3 blade—silver body and red trim.

PLAIN BEARING

This lawn mower is an outstanding value among low-priced mowers. It is guaranteed to give reliable performance and long service.

MINNOWS

PLUNKER MINNOW

No. 2200 Series — **$6.16 Doz.**

No.	Color
2201	Yellow Perch
2203	Green, Gold Dots
2204	White, Red Head
2205	Rainbow
2206	Pike Scale
2207	Perch Scale
2208	Frog Finish
2212	Silver Flitter

A floating popping Lure that is a very successful fish getter, particularly when used with a trailer Fly attached. Most effective when used by giving short jerks to rod and then allowing bait to be still a moment. Length 3 inches. Weight ¾ ounce. Packed one to a box.

SKIPPY MINNOW

No. 8300 Series — **$6.16 Doz.**

No.	Colors
8301	Perch scale
8303	Green scale
8304	White, red head
8305	Rainbow
8306	Silver scale
8307	Pike scale
8308	Frog finish
8312	Silver flitters

A small Skippy Bait. Thousands of fishermen are finding the smaller lures the top in sport and this lure is eagerly taken by all fish. Weight ⅜ oz., length 2⅞".

SHUR-STRIKE SINKER

No. 800 Series — **$6.16 Doz.**

No.	Colors
801	Yellow Perch scale
803	Green scale
804	White, red head
805	Rainbow
806	Shiner scale
807	Pike scale
808	Frog finish
812	Silver flitter

A small sinking bait especially suited for lake and stream fishing. Travels rather deep. Equipped with best quality hardware and Mustad extra strength hooks. These Lures have a high grade finish. Length 2½". Weight ⅜ ounce. Shipping weight 2 lbs. doz.

SHUR-STRIKE JOINTED FLOATER

No. 500 Series — **$7.92 Doz.**

No.	Colors
501	Yellow Perch scale
502	Red side scale
504	White, red head
506	Shiner scale
507	Pike scale
512	Silver flitter

A Jointed Floating Lure with a very effective action. Finished and equipped same as No. 800 Series. Length 3¼". Weight ⅝ ounce. Shipping weight 2 lbs. doz.

FLORIDA SHINERS

The new Bass Lure with Real Fish Appeal

No. 1170—Small — **$14.24 Doz.**

No. 1171—Large — **15.84 Doz.**

This Lure combines both the design and color to resemble the Shiner which is the choice of natural food for fresh water Bass and Trout. One doz. to card.

POP-I

No. 6574 Series — **$12.24 Doz.**

No.	Colors
6574-BSF	Black, silver specks
6574-F	Frog
6574-SF	Silver flitter
6574-WF	White, red head
6574-GR	Grey, red head

A new popping type of bait designed to be fished by jerk and reel method. Canoe faced head makes loud pop when jerked thru water. When at rest top of head sticks out of water. A real killer for bass. Weight ⅝ ounces, length 3¼".

PAW PAW MINNOWS

THE FLAP JACK

$14.40 Doz.

Series No. 3600

No.	Color
3601—	Perch scale
3604—	White, red head
3612—	Silver flitters
3631—	White, red tip, black top, spots
3632—	Green Frog
3634—	Yellow, red and black spots
3636—	Fluorescent

Real quality and eye appeal are built into "Flap Jack"—strong, streamlined body made of durable moulded TENITE rust-proof cadmium plated hooks, operating from ball-and-socket joints, securely fastened to body, beautiful patterns to meet the choice of every angler. A real fish-geter with an extra amount of crazy, tantalizing action when reeled slowly. Length 3½ inches. Weight ¾ ounces.

PAW PAW MINNOWS

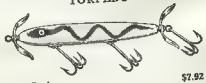
$7.92 Doz.

No. 9300 Series

No.	Color
9300E	Natural Gold Scale
9300L	Silver Scale, Red Head and Stripes
9300W	Gold Scale, Red Stripes
9300Y	Yellow Scale, Black Back and Stripes
9301	Yellow Perch
9304	White, Red Head
9306	Green Back, Silver Scale
9312	Green Back, Silver Flitters
9317	White with Black Stripe down side

Medium sized well balanced minnow with Paw Paws new iridescent scale finishes and new Resinite water proofing Has very attractive action in water, running just below surface while retrieving and floating when at rest. The finish on this bait is excellent and will withstand hard usage. Bait weighs ⅝ ounce and is 3¼" long. Recommended for medium light tackle.

TORPEDO



$7.92 Doz.

No. 2400/3 Series

No.	Colors
2401/3—	Perch scale
2403/3—	Green scale
2404/3—	White, red head
2405/3—	Rainbow
2407/3—	Pike scale
2412/3—	Silver flitters
2417/3—	White with wavy black stripe
2418/3—	White with wavy green stripe

A Slender "Torpedo" Minnow. Can't be beaten for southern fishing, three treble hooks.

RIVER TYPE

$8.16 Doz.

No. 900 Series

No.	Colors
901—	Perch scale
903—	Green scale
904—	White, red head
905—	Rainbow
906—	Silver scale
907—	Pike Scale
908—	Frog finish
912—	Silver flitters

River Floating Style, the best bait possible for small mouth fish, particularly good for bass. Two Treble Hooks. Length 2⅝ inches. Weight ½ oz.. One to box.

UNDERWATER MINNOW

$8.16 Doz.

No. 3300 Series

No.	Colors
3304—	White, red head
3303—	Green
3305—	Rainbow
3307—	Pike scale
3308—	Frog finish

Underwater Minnow with Front Spinner, Three Treble Hooks. A great favorite in all waters. Length 2⅜ inches. Weight ½ oz. One in a box.

PIKE MINNOW

$6.16 Doz.

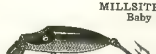
No. 1400 Series

No.	Colors
1401—	Perch scale
1403—	Green scale
1404—	White, red head
1405—	Rainbow
1406—	Silver scale
1407	Pike scale
1408—	Frog finish
1412—	Silver flitters

Jr Size Pike, Two Treble Hooks, Floating Type Minnow, Length 3¼", Weight ½ ounce. One to Box.

MINNOWS

MILLSITE BAITS
Baby Size

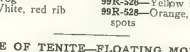


Smallest Millsite bait. Has plenty of action and will stand up well under all conditions. Length 2⅛", weight ½ ounce.

No. 99R-500 Series — $8.80 Doz.

No.	Colors	No.	Colors
99R-501	White, red head	99R-523	Black rib
99R-507	Pike scale	99R-524	Silver rib
99R-517	Frog	99R-526	Yellow rib
99R-522	White, red rib	99R-528	Orange, black spots

MADE OF TENITE—FLOATING MODEL

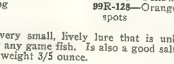


No. 99R-100 Series — $8.80 Doz.

No.	Colors	No.	Colors
99R-101	White, red head	99R-122	White, red rib
99R-104	Perch scale	99R-123	Black rib
99R-106	Green scale	99R-124	Silver rib
99R-107	Pike scale	99R-126	Yellow rib
99R-117	Frog	99R-128	Orange, black spots

This is a very small, lively lure that is unbeatable for Bass, Pike or any game fish. Is also a good salt water bait. Length 2¾", weight 3/5 ounce.

SINKING MODEL

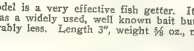


No. 99R-200 Series — $8.80 Doz.

No.	Colors	No.	Colors
99R-201	White, red head	99R-222	White, red head
99R-204	Perch scale	99R-223	Black rib
99R-205	Shiner scale	99R-224	Silver rib
99R-206	Green scale	99R-226	Yellow Rib
99R-207	Pike scale	99R-228	Orange, black spots
99R-217	Frog		

This model is a very effective fish getter. Its shape is the same as a widely used, well known bait but the price is considerably less. Length 3", weight ⅝ oz., metal parts rust-proof.

JOINTED SINKING MODEL



No. 99R-400 Series — $13.40 Doz.

No.	Colors	No.	Colors
99R-401	White, red head	99R-407	Pike scale
99R-404	Perch slale	99R-422	White, red rib
99R-405	Shiner scale		

This Millsite Jointed Sinking Minnow, made of Tenite is the same as the Sinker except is Jointed. It sinks slowly, has a very lively action and travels deep. Length 3¼", weight ¾ oz. All metal parts rust-proof.

MILLSITE RATTLE BUG

No. 900-R Series — $11.88 Doz.

No.	Colors	No.	Colors
902-R	Black and red	906-R	All Red
903-R	Natural	907-R	Red and yellow
904-R	Yellow and black	908-R	Frog
905-R	White and red	915-R	Silver speckle

The Millsite Rattle Bug, made of Tenite, is new in design and features. It rattles as it moves. The Rattle bug floats when still, goes under water when retrieved, the sound vibrations attracting the fish. This bait is new in design and is very effective on all game fish. Length 1⅞", weight ⅝ oz. Be sure to use a light leader and swivel with Rattle Bug.

PFLUEGER'S PAL-O-MINE MINNOW

No.	Size	Color	Doz.
5005-3¼	"—Natural Frog Scale Finish		$13.90
5005-4¼	"—Natural Frog Scale Finish		15.40

The Pal-O-Mine is a very successful bait for taking many kinds of fish including the smaller salt water fish. The highly polished reinforced lip gives this bait a very snappy action. Body is of cedar with plastic enamel finish. Figure eight connecting link facilitates attaching line and permits free action of bait. 3¼" bait, weighs ½ ounce and has 2 treble hooks, 4¼" weighs ¾ ounce and has 3 treble hooks. Packed 1 to box, 6 to attractive display box.

CLARK'S WATER SCOUT SEMI-FLOATER

No. 300 Series — $13.46 Doz.

No.	Color	No.	Color
301	White body, red head	311-X	Brown scale
307	Green streak, silver scale	314	Yellow perch
308-X	Green scale, yellow belly	315	Pearl, black stripe on back
309	Rainbow	324	Frog
316-X	Shiner, silver scale	324-X	Pearl, gold diagonal stripe on sides

The Waterscout is a semi-floating type that comes to the surface when not in motion. Submerges at slightest motion of reel and goes to a depth of 3 or 4 feet and remains no matter how slowly the reel is spooled. Has a wonderful sharp tail motion that makes it irresistable to game fish. It is also an excellent trolling lure. Weight ⅓ ounce.

MINNOWS

SHAKESPEARE MINNOWS—DOPEY

$12.24 Doz.

Series No. 6603

No.	Colors
6603-WRS	White, red head, silver specks
6603-SF	Silver flash
6603-WR	White, red head
6603-GP	Perch scale
6603-YP	Yellow Perch
6603-GPR	Green Perch, red head
6603-Y	Yellow
6603-F	Frog
6603-BRS	Blue, red scale
6603-NP	Natural Pike scale
6603-BR-1	Black, white ribs
6603-WR-1	Whi'e, black ribs

Gets 'em all big or small. Whether you retrieve Dopey fast or slow it has a devas'ing wiggle. Excellent for all game and panfish. Weight ¼ ounce, length 1⅞".

RUBBER SKIRTS FOR DOPEY

$3.60 Doz.

No. 6625

Rubber Hula skirt for attaching to Dopey bait. Greatly increases the action. Furnished in following colors—Black and white, red and white, black and yellow, black and red, yellow and white andwhite.

GLO-LITE PUP

No.	Colors	Doz.
6554 GPR	Perch scale, red head	$17.28
6554-SF	Silver flash	17.28
6554-WRS	White, red head, silver speckles	17.28

Excellent for the big ones that stay down deep. The Glo-Lite bait will glow for 4 to 5 hours after being exposed to sunlight or flashlight for 3 minutes. Will not wear off. Luminous substance is moulded right into bait. Weight ½ ounce, length 2⅝".

SHAKESPEARE PUP

No.	Colors	Doz.
6564-WRS	White, red body, silver specks	$14.40
6564-YP	Yellow Perch	14.40
6564-SF	Silver flitter	14.40
6564-GPR	Perch scale, red head	

Same as above except not made of Glo-Lite tenite.

SALT WATER SPECIALS

HEDDON

No.	Colors	Doz.
802	White body, red head	$12.96
808-RH	White body, gold speckled, red head	12.96

Salt water game fish lure. Body length 3⅞". Wt. ¾ oz

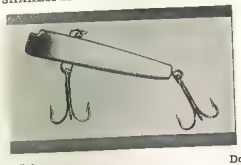
No.	Colors	Doz.
602	White body, red head	$12.96
608-RH	White body, gold speckled, red head	12.96

Salt water game fish lure, also used in fresh water. Body length 3⅛". Weight ¾ ounce.

No.	Colors	Doz.
502	White body, red head	$12.96
508-RH	White body, gold speckled, red head	12.96

Same as No. 602 and 608 except smaller. Length 2¾". Weight ½ ounce.

SHAKESPEARE WIGGLE DIVER



No.	Colors	Doz.
6527-SF	Silver flash	$13.68
6527-WR	White, red head	13.68

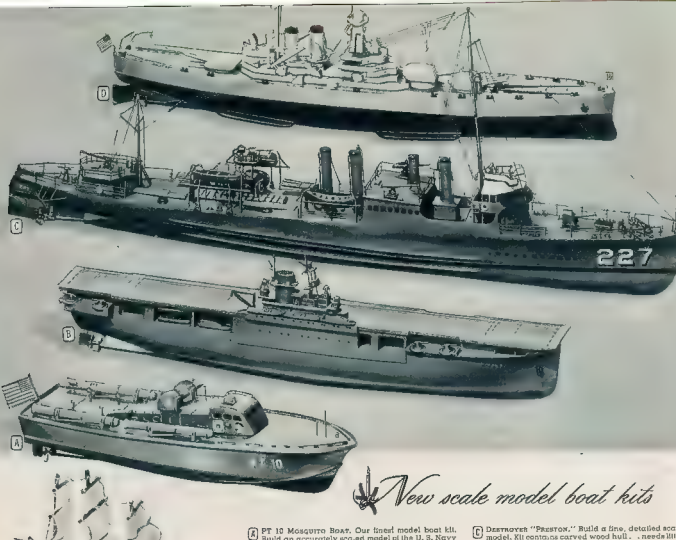
One of the most popular and successful baits on the market. Equally good in both salt and fresh water. This is a wonderful striped bass bait. Made of tenite for durability, length 2¼", weight ½ ounce.

MAE WES' TYPE

No.	Colors	Doz.
2301-M	Yellow body, red head, silver flitters	$6.16
2302-M	White pearl, blue eyes	6.16
2304-M	White, red head	6.16
2305-M	Rainbow	6.16

A Salt Water Lure weighted for deep diving for Yellow Tails, weak fish, striped bass and other species of salt water game fish, also an excellent fresh water bait.

★K—1—EM



New scale model boat kits

(A) PT 10 Mosquito Boat. Our finest model boat kit. Build an accurately scaled model of the U. S. Navy Mosquito Boat that carried General MacArthur safely from Corregidor to Australia. Completely detailed down to ventilators and handrails. Scale is 3/16 in. to 1 ft. Ready shaped wood hull, gun turrets, torpedoes. Wood parts and over 30 cast metal parts in kit. Scaled plans. No paints, see paint set on Page 85.
48 T 3848 Abt. 13 in. long. Ship. wt. 2 lbs $4.69

(B) Aircraft Carrier "Wasp." Build a detailed scale model. Kit contains ready-shaped wood-plastic hull, plans, all materials. No paints, see set P. 85.
48 T 3811—Abt. 18 in. long Ship. wt. 1 lb. 4 oz... $1.39

(C) Destroyer "Preston." Build a fine, detailed scale model. Kit contains carved wood hull . . needs little trimming. Fittings, paints, all necessary materials
48 T 3810 Abt. 24 in. long. Ship. wt. 1 lb. 8 oz $3.19

(D) Battleship "North Carolina." Build a detailed, scale model. Kit contains shaped wood-plastic hull, plans, all materials. No paints, see set Page 85.
48 T 3812—Abt. 18 in. long. Ship. wt. 1 lb. 4 oz... $1.39

(E) & (F) Wood Model Kits. Build models easily. Parts, all ready cut, colored. Wt. ea. 2 lbs. 4 oz.
(E) 48 T 1132—Clipper Ship. 17 in. long. Ht. 15 in. . 79c
(F) 48 T 1131—Stagecoach. 19 in. long Ht. 10½ in. 85c

Strombecker Wood Construction Kits Require No Carving and Are Easy to Assemble

Curio Cabinet models of solid wood (not balsa), shaped parts ready to sand, assemble. Instructions; all materials included. Paint only where stated. See paints, P. 85.

(G) Douglas Boston bomber American built R. A. F.
48 T 3851—10¼-in. wingspan. Ship. wt. 2 oz 44c

(H) Consolidated Liberator B24, U. S. Army Bomber
48 T 3853—Wingspan abt. 19½ in. Ship. wt. 1 lb. 8½c

(J) Martin Maraudeb B26, U. S. Army Medium Bomber.
48 T 3850—Wingspan 11 in. Ship. wt. 12 oz . . .53c

(K) Boeing Flying Fortress B17, U. S. Army Bomber
48 T 3852—Wingspan abt. 17½ in. Ship. wt. 1 lb. 85c

(L) Aircraft Carrier "Yorktown." Complete dock.
48 T 3840—12 in. long. Ship. wt. 8 oz 28c

(M) Battleship "California." Turrets, guns, bridge.
48 T 3841—19¾ in long Ship. wt. 8 oz 68c

(N) Curtiss P40 Pursuit Plane. Kit, on stand 5 in
48 T 3848 5½ in. long. Ship. wt. 8 oz 24c

(P) 155mm Field Gun and Carriage. Gun barrel slides on carriage, turns; trails adjust. Olive drab paint
48 T 3830—18 in. long Ship wt. 1 lb. 10 oz. 98c

(R) Anti-Aircraft Gun Revolves on undercarriage. Elevates to 90° angle. Olive drab paint included.
48 T 3837—10 in. high. Ship. wt. 8 oz 49c

(S) Army Jeep. Authentic scale model of the famous U. S. Army jeep. Wheels roll. Hood lifts to give access to small "motor." Very well detailed.
48 T 3813 - About 8½ in long Ship. wt. 1 lb. 83c

(T) Army Light Tank. Caterpillar treads turn as you push it along. Turrets rotate. Olive drab paint.
48 T 3835 —9 in. long. Ship wt. 1 lb. 12 oz $1.05

LIGHT WEIGHT BOATS

ALL F.O.B. FACTORY

WATER-MASTER

Length	Model	Width Beam	Width Stern	Depth Amidship	Seats	Deck Length	Weight Approx.	Crated for Shipment F.O.B. Chicago Each
12 Ft.	Standard	41″	35″	18″	3	None	87 lbs.	$ 82.40
14 Ft.	Standard	50″	42″	19″	3	None	145 lbs.	106.30
12 Ft.	DeLuxe	41″	35″	18″	2	44″	92 lbs.	89.30
14 Ft.	DeLuxe	50″	42″	19″	2	53″	150 lbs.	113.10

All four models are truly the best all-wood boats for every use. Their streamlined design, plus master craftmanship, tested and proven, assure more pleasant, easier rowing, and better speeds when used with outboard motors. Sturdily built to rough it in the wilds, yet smart and trim in appearance, **Water Master** is the boat for lasting enjoyment and enduring economy. Its many features are suited to hunting, fishing and safe pleasure boating anywhere. Color: white and green.

WATER-MASTER SPECIFICATIONS

Constructed of finest materials, assembled by experienced master craftsmen to assure the acme of performance plus the utmost in service.

Sides and Bottom:—Tough, long life, ¼″ patented special laminated water-proof bonded ply wood.

Rib Frame Work:—Solid clear pine—cut, beveled and fitted to shape.

Super Stern:—Heavy duty, specially designed for outboard motor use, with center and side supports, plus secondary rib.

Prow:—Solid 1-piece double rabbeted, clear pine.

Keelson:—One-piece 1¾″ finished, full length clear pine, laid into rib framework construction.

Keel:—Full length one-piece solid clear pine.

Chines:—Full length one-piece solid clear pine.

Gunwale:—Full length half-round one-piece solid clear pine.

Deck:—Custom-built, streamlined design in 3 sections, of tough, long life ¼″ special laminated waterproof bonded ply wood supported by carlings and rib frame work. On DeLuxe Models only.

Finish:—Interior Deck, Gunwales, Seats, and Floor Boards with two heavy coats marine specification special Spar Varnish. Exterior two coats, waterproof primer, finished with special bakelite waterproof white on sides and stern, green on bottom and water line.

Oarlocks:—Galvanized North River side plate oarlocks, complete with horns.

Screws:—From 1,000 to 1,300 heavy cadmium plated screws of varied sizes, as required.

Approximate shipping time 7 to 10 days.

CHIPPEWA

Length	Model	Width Beam	Width Stern	Depth Amidship	Seats	Deck Length	Weight Approx.	Crated for Shipment F.O.B. Eau Claire, Wis. Each
12 Ft.	Scout	40″	33″	15″	3	None	80 lbs.	$ 70.00
14 Ft.	Scout	45″	36″	18″	3	None	115 lbs.	93.00
12 Ft.	Chief	40″	33″	15″	2	45″	85 lbs.	77.40
14 Ft.	Chief	45″	36″	18″	2	50″	120 lbs.	100.40

Many new features are included in the new line of **Chippewa Boats.** More perfect streamlining and even better balance are obtained to give more pleasing lines. These boats are made of the same material that airplane manufacturers are using in present day planes,—fir veneer bound together with a special patented synthetic, cured under high pressure and heat. (Do not confuse this material with the ordinary rosin-bound plywood.)

Chippewa Boats are lighter and can easily be carried by one person. Transportation on top of your car is a great convenience. No soaking is required to keep it from leaking

It does not water log. The method of construction eliminates vibration, the cause of leaks and breakdowns when outboard motors are used. A much smoother and enjoyable ride is the result.

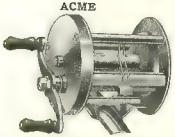
The patented features found only in **Chippewa Boats** are "V" bottom and "M" stern. It is impossible to skid a **Chippewa Boat** due to these features. They also allow the boat to "plane out" perfectly and to "bank in" on all curves at any speed. Color:—Red, white and green.

Prices on application for salt water construction. Approx. shipping time 7 to 10 days.

★K—1—EM

SHAKESPEARE CASTING REELS

ACME



No.	Weight	Each	List
1904	½ lb.	$22.2	$1.85

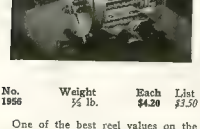
All Metal Reel finished in burnished nickel. Has brass bearings, bushings and gears. Open end spool caps for easy oiling. This reel runs as quiet and smooth as many reels twice its price.

DEUCE

No.	Weight	Each	List
1905	½ lb.	$3.00	$2.50

An outstanding all metal reel. Made of brass heavily nickeled, spool bearings and bushings are of hard brass and steel. Has adjustable spool caps and gears of hard drawn brass with steel spiral. An exteremely nice low priced reel. Capacity 100 yds. 14 lb. line.

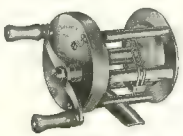
TRUE BLUE



No.	Weight	Each	List
1956	½ lb.	$4.20	$3.50

One of the best reel values on the market. Constructed with brass frame heavily chrome plated, adjustable agate spool caps. Bearings and bushings are of phosphor bronze and steel while gears are made of brass with steel spiral. Equipped with new Mono-pawl with knob for easy removal. Capacity 100 yds. 14 lb. line.

TRIUMPH



No.	Weight	Each	List
1958	½ lb.	$6.80	$5.70

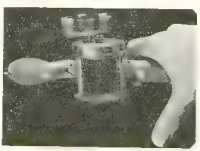
Beautifully finished medium priced reel with adjustable drag. Made of brass with heavy chrome finish and plastic head ring. It is unusually silent in operation due to new quiet spiral gear and phosphor bronze and steel bearings and bushings. Takes down thru head and has new Mono-pawl for easy changing. Capacity 100 yds. 14 lb. line.

CRITERION

No.	Each	List
1960	$ 9.00	$7.50
1960-AS—Alum. Spool	9.00	7.50
1960-LH—Left Hand	10.80	9.00

The Criterion Reel embodies all of the features of much higher priced reels and is the finest value on the market today. Frame of brass with chrome plating. Inside takedown, level wind. Three piece design. Jeweled adjustable spool caps. Adjustable tail casting drag. Capacity 100 yds. 14 lb. test line, 50 yds. with cork arbor. Weight 8¾ oz. Split cork arbor furnished.

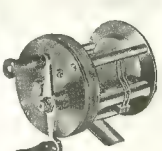
WONDEREEL



No.	Weight	Each	List
1920	7.6 oz.	$9.00	$7.50

Make long smooth casts. No thumbing -no backlash. You will be amazed at the way your bait will travel with little effort. Spool speed is controlled by an oversized tail bearing and an adjustable head end spool cap. Ideal for night fishing, beginners, women and children. Chrome plated over nickeled brass frame. 4 to 1 spiral gears. 3 piece takedown. Capacity 100 yds. 14 lb line. Weight 7.6 oz. Cork arbor furnished.

WONDEREEL DeLUXE



No.	Weight	Each	List
1922	8.2 oz.	$13.20	$11.00

Has the same famous "No Thumb" feature as No. 1920 but is a DeLuxe Reel. Head and tail plates are nickel silver with mottled black and white plastic head ring. Oiling crank nut assures positive lubrication of moving parts. Phosphor bronze bearings. Matched 4 to 1 spiral gears. 3-piece takedown. Capacity 100 yds. 14 lb. line. Weight 8.2 ounces

Cuddly soft toys...washable animals

A JERRY THE RED FLANNEL HORSE. Flops into comical poses. Covered with brushed rayon-and-cotton flannel, stuffed with soft cotton. Long, floppy legs; percale hoofs. Big, Black button eyes. Thick cotton yarn mane and tail. Gay checked percale saddle and harness. 17 inches high. Ship. wt. 1 lb. 4 oz.

48 T 3219—Jerry the Horse..... $1.98

B WASHABLE BABY LAMB. Colorful percales, assorted colors. Practical, waterproof finish. Easy to clean—wipe with damp cloth. Features painted on. Perky ears, stubby tail. Seams strongly stitched—stuffed with soft cotton. Ribbon bow around lamb's neck. Height to top of head about 9 inches. Ship. wt. 1 lb. 4 oz.

48 T 3180—Washable Lamb.. ..... $1.23

C WASHABLE ELEPHANT. Made of percale, assorted colors. Sanitary, washable finish—clean with damp cloth. Fat, chubby body stuffed with soft cotton. Bright, happy eyes painted on. Big ears bound with bias tape. About 7 in. tall, 9½ in. long. Ship. wt. 1 lb. 8 oz.

50 WARDS CASH

48 T 3230—Washable Elephant.....$1.19

D PETE THE PENGUIN. This friendly little playmate has a fat pudgie body covered with soft rayon plush, stuffed with cotton. Cotton-stuffed felt beak; Black button eyes securely attached. Stuffed felt feet. Floppy wings and stubby little tail. He can stand alone. About 13 in. tall. Ribbon bow around neck. Ship. wt. 1 lb. 4 oz.

48 T 3078—Pete the Penguin. .. .$1.98

E TICKLE-ME DOLL. This ticklish little Miss squeaks when you squeeze her. Lightweight and unbreakable. Hand-painted hard cloth face. Body of strong, flesh color fabric, filled with cotton. Checked percale dress, *Assorted Red and Blues* matching bonnet and undergarments; socks and shoes 14 in. tall. Ship. wt. 1 lb. 4 oz.

48 T 3211—Tickle-Me Doll. $1.42

F WASHABLE SCOTTIE. Covered with water-proofed percale, assorted colors. Clean with damp cloth. Eyes, nose, mouth painted on. Stuffed with soft cotton. About 7½ in. tall, 8½ in. long. Ribbon bow. Ship. wt. 1 lb. 4 oz.

48 X 3102 Washable Scottie.....$1.23

USE YOUR CREDIT . . . SEE PAGE 109

G DROWSY DOLLY. Soft as a bunny. Downy rayon and cotton chinchilla cloth—stuffed with soft cotton. Light and easy for baby to handle. Molded cloth face, tinted rosy Pink; painted features Rayon and cotton yarn curls. 15 inches high. Assorted colors Ribbon bow. (Pillow not included.) Ship. wt. 1 lb. 4 oz.

48 X 3209—Drowsy Dolly.....97c

H WASHABLE SPANIEL. Lovable, friendly mascot shaped like a real live spaniel. Percale, assorted colors. *Washable finish*—clean with damp cloth. Cotton stuffed. Long, droopy ears and stubby tail lined in contrasting color. Painted features. Ribbon bow. About 11 in. long, 8 in. high. Ship. wt. 1 lb. 4 oz.

48 T 3101—Washable Spaniel $1.67

I WASHABLE SITTING SPANIEL. Colorful percale prints, assorted colors. Sanitary washable finish—clean with damp cloth. Floppy ears bound with bias tape. Stubby tail. Round, chubby body stuffed with cotton. Eyes, nose and mouth painted on. About 7½ inches high, 7 inches long. Ribbon bow. Ship. wt. 1 lb.

48 T 3178—Washable Sitting Spaniel .. $. 19

personality and play appeal

G WASHABLE CUDDLE KITTEN. Cuddly baby kitten . . . soft and lightweight . . . lovable playmate for even tiniest baby. Thick, fleecy coat of fine quality, 100% virgin wool. Snowy-white . . . with instructions for washing included. Soft, floppy arms and legs. Body stuffed with fluffy cotton. Baby ears lined with pink, embroidered nose, sparkling green glass eyes. Red felt tongue. Cute white whiskers. About 14 inches tall. Beautiful ribbon bow. Ship. wt. 1 lb. 6 oz.
48 T 3085—Washable Cuddle Kitten. . . . $5.25

H PERCY THE PUP. Comical, droopy-eared rascal. Head is long, many rayon plush. Arms, legs, inside of ears are brushed rayon and cotton flannel. Striped cotton jersey body. Cotton stuffed. Head turns. Felt eyes, nose and tongue.
48 T 3071—20 in. tall. Wt. 2 lbs. 8 oz. $4.98
48 T 3072—14 in. tall. Wt. 1 lb. 8 oz. 2.98

J DONALD DUCK. One of Walt Disney's most popular characters. Bold, scrappy Donald has quacked his quarrelsome way into every heart. Authentic reproduction. Donald's all dressed up like a sailor . . . wears a blue corduroy middy and jaunty sailor hat. Body covered with cotton velveteen and firmly stuffed with cotton. Yellow felt bill and cunning web feet. Blue felt eyes securely fastened. Shabby Luke tail. Clothes are not removable. About 13 inches tall. Ship. wt. 1 lb. 2 oz.
48 T 3.08 -Donald Duck $1.98

K BLACK AND WHITE PUPPY. Gentle, cuddly fellow has a coat of long, fluffy rayon plush. Long black ears and tail. Realistic markings around big glass eyes. Embroidered nose, felt tongue. Very lightweight—cotton stuffed. About 10 in. tall, 12 in. long. Ribbon bow. Ship. wt. 1 lb.
48 T 3075 Black and White Puppy . . $1.98

L TUFFY AND HIS STORY BOOK. Tuffy looks more like a real live North Woods bear than any teddy bear you've ever seen. Designed to look exactly like the cub in the story book we can show dozens of photographs of a cunning baby bear, and tells about his adventures. Tuffy can stand on "tall fours" or sit up just like a real bear. Fine qual. y mohair plush, soft velveteen snoot, embroidered nose, black button eyes. Turning head, jointed legs 11½ in. tall. Wt. 3 lbs. 6 oz.
48 T 3.00—Tuffy and His Story Book. $8.95

M PLUTO THE PUP. Walt Disney's mischievous hound. Long, floppy ears, embroidered wrinkled nose, doleful expression. Cotton velveteen, cotton stuffed. Embroidered mouth, red felt tongue. Black celluloid eyes, loose collar. 10 in. tall. Ship. wt. 1 lb. 2 oz.
48 T 3105—Pluto. . $1.98

Air Transport Changes "SOS" to SUB ON SCHEDULE

The U. S. S. *Perca* is pulling at her leash. Day after tomorrow she will slide down the ways . . . eager to nose out into the Pacific on her first Jap hunt.

Just a few finishing touches . . . when suddenly a cable slips, a guy-rope snaps, and the custom-built housing for a new-type listening device is smashed!

An "SOS" flashes 2500 miles over long distance wires to a mill in Pittsburgh. Foundrymen, machinists and engineers roll up their sleeves and go into action . . . work all day, all night, all the next day.

On the evening before the launching, two master mechanics from the Pittsburgh plant board a westbound Airliner . . . with the finished housing, marked "*Rush by Air Express*," in the cargo compartment up ahead. And the *Perca* takes her maiden dive on schedule.

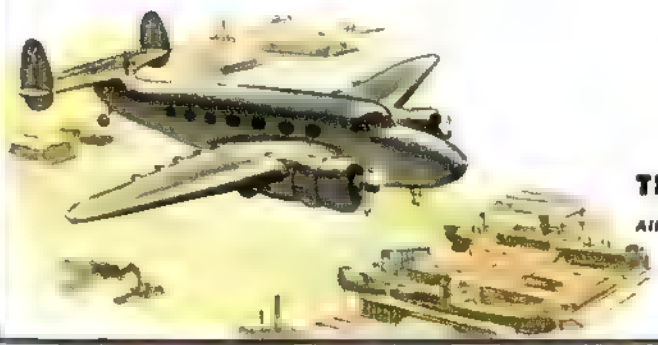
This kind of bottleneck-breaking is all in a day's work for the nation's Airlines. Maintaining regular schedules between all important production centers, they speed key men and vital materials to save priceless hours for war industry.

And in addition . . . by working hand in hand with the Army and Navy Air Transport services in the globe-girdling job of flying supplies to our fighting men on every front . . . the Airlines are blazing the trails for a peacetime world in which distance will be measured in *hours!*

• • •

When you travel by Air *make reservations early; please cancel early if plans change.* When you use Air Express *speed delivery by dispatching shipments as soon as they're ready. Air Transport Association, 1515 Massachusetts Ave., N. W., Washington, D. C.*

BET YOUR MONEY ON UNCLE SAM. BUY BONDS!



THE AIRLINES OF THE UNITED STATES

AIR TRANSPORT GETS THERE FIRST...PASSENGERS...MAIL...AIR EXPRESS

THIS, TOO, IS AIR POWER!

TRANSPORT PLANES that serve the home front are a measure of U. S. air power, as surely as the bombers that blast the Axis.

Today, as for many years, the United States is the leading power in air transport.

Its Airlines knit hundreds of cities and foreign countries into a single airways system, with faster, more efficient service than ever attained by any other nation.

Consequently, when the Japs struck at Pearl Harbor, they asked for the greatest show of air transport the world has ever witnessed. Built during years of peace, the Airlines required no conversion for war. *They were ready to go!*

They promptly handled a sharp increase in tonnage—passengers, mail, express—despite the fact that half their planes were assigned to military duty.

The Airlines also helped the Army and Navy establish air supply routes to every fighting zone—and are now operating a giant fleet of transport planes over this global system.

So wherever you see a transport plane, remember this: IT, TOO, IS AIR POWER—an integral part of our war machine.

And when the war is only a memory these same Airlines, with over a billion miles of experience behind them, will continue in friendly commerce. As PRESIDENT ROOSEVELT recently said: "With the dawn of peace, commercial aviation will have new and greater opportunities for which it will be all the better prepared by reason of the training and experience it is now getting."

When you travel by Air *make reservations early; please cancel early if plans change.* When you use Air Express *speed delivery by dispatching shipments as soon as they're ready.* Air Transport Association, 1515 Massachusetts Ave., N. W., Washington, D. C.

IF YOU'VE DONE YOUR BIT, NOW DO YOUR BEST . . . BUY BONDS!

THE AIRLINES OF THE UNITED STATES

AIR TRANSPORT GETS THERE FIRST . . . PASSENGERS . . . MAIL . . . AIR EXPRESS

Your Red Cross was ready!

Here are a few examples of how the American Red Cross meets every crisis of Peace or War, wherever it occurs.

When the first bombs hit Pearl Harbor, Red Cross workers headed by Alfred Castle opened emergency hospitals. Blood donors were enlisted, 10,000 in all. Information centers helped anxious service men to find their families.

Even before the Philippine invasion, Red Cross field man Irving Williams helped prepare Manila for evacuation and saved many lives by staging practice alerts and chartering a ship which later took out 1,200 refugees.

During the Japanese invasion of Burma, Walter Wesselius of the Red Cross traveled up and down the crowded Burma Road, giving food and medicines to Chinese soldiers and civilians.

After working day and night to help Americans escape air raids in Jugoslavia, Paul Thorn, Red Cross worker, was finally captured by the Nazis in Greece while aiding those trapped by swiftly advancing Panzer divisions.

When three U. S. cruisers were sunk off the Solomons, Red Cross Field Director Alfred Campbell distributed clothing and kit bags containing cigarettes, soap, razors and other comforts to half-naked and exhausted sailors who had lost everything.

The demands upon the Red Cross are being multiplied daily. A year has passed since the American people were asked for financial support. Red Cross funds are getting low. March is Red Cross month. Give generously!

AMERICAN RED CROSS

This page contributed to the American Red Cross by the National Geographic Society

"Ears for Victory"

AWARDED TO PLANT 2
OPTICAL DIVISION

MILITARY RADIO
BY

argus

INTERNATIONAL INDUSTRIES, INC.

ANN ARBOR MICHIGAN

FINE AMERICAN
CAMERAS

•

PRECISION OPTICAL
INSTRUMENTS

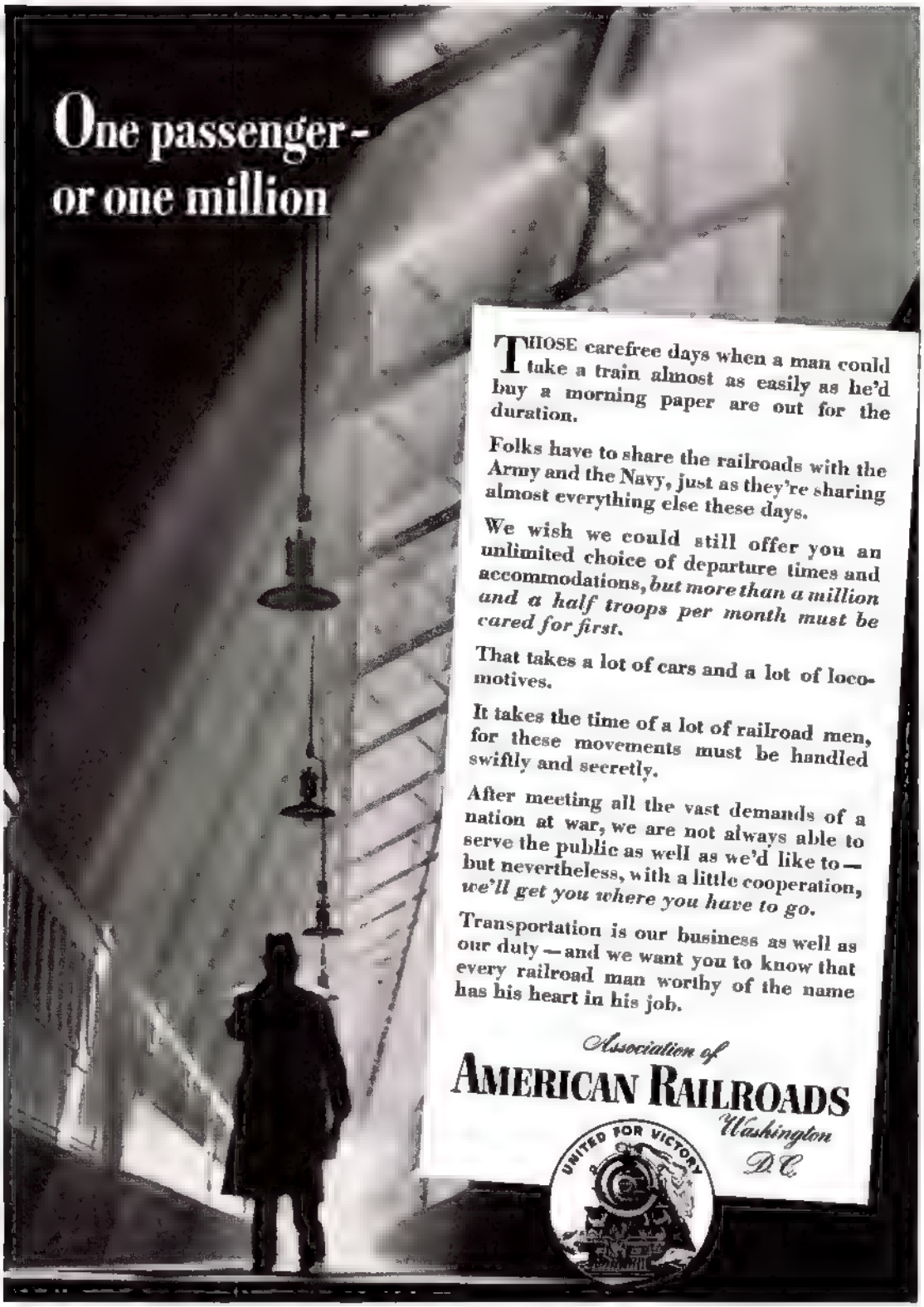
■

AVIATION RADIO
EQUIPMENT

•

BUY WAR BONDS

"RIGHT OF WAY FOR THE U. S. A."



One passenger - or one million

THOSE carefree days when a man could take a train almost as easily as he'd buy a morning paper are out for the duration.

Folks have to share the railroads with the Army and the Navy, just as they're sharing almost everything else these days.

We wish we could still offer you an unlimited choice of departure times and accommodations, *but more than a million and a half troops per month must be cared for first.*

That takes a lot of cars and a lot of locomotives.

It takes the time of a lot of railroad men, for these movements must be handled swiftly and secretly.

After meeting all the vast demands of a nation at war, we are not always able to serve the public as well as we'd like to — but nevertheless, with a little cooperation, *we'll get you where you have to go.*

Transportation is our business as well as our duty — and we want you to know that every railroad man worthy of the name has his heart in his job.

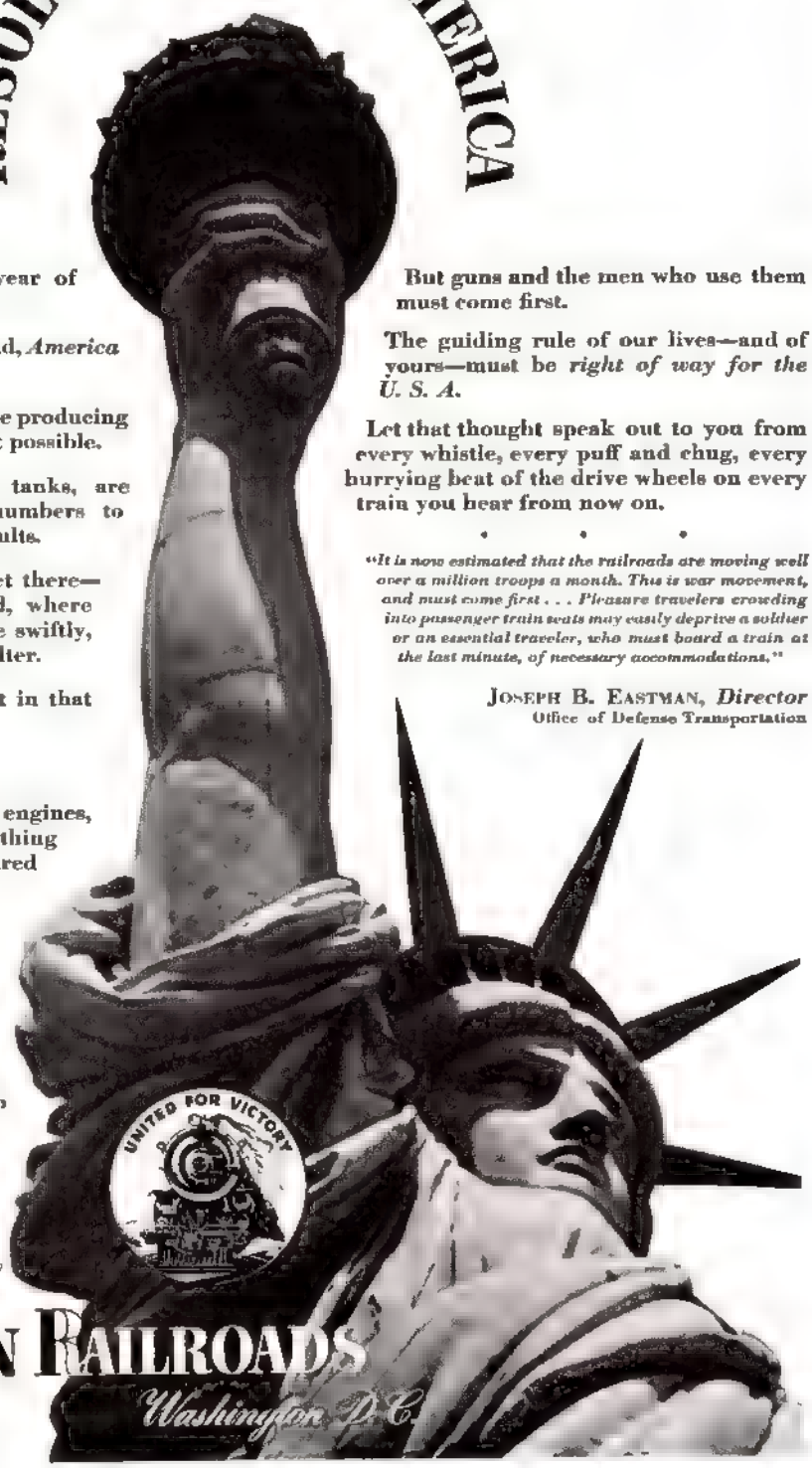
Association of

AMERICAN RAILROADS

Washington D.C.

UNITED FOR VICTORY

RESOLUTION FOR AMERICA



This year must be the year of decision.

This year, all over the world, *America fights.*

Our factories and farms are producing the materials to make that possible.

Our ships, planes, guns, tanks, are taking swift shape in numbers to accomplish conclusive results.

These things must now get there—get where they're needed, where they will be felt—get there swiftly, on time, without fail or falter.

The railroads have a part in that job—a big part.

They accept it.

They could do with more engines, more cars, more everything when materials can be spared for them.

Until then and after, railroads and railroad men will continue to work as they never worked before to get the job done.

If, now and then, that means inconveniences to you as a traveler, we are sorry. We are trying to avoid that, too.

But guns and the men who use them must come first.

The guiding rule of our lives—and of yours—must be *right of way for the U. S. A.*

Let that thought speak out to you from every whistle, every puff and chug, every hurrying beat of the drive wheels on every train you hear from now on.

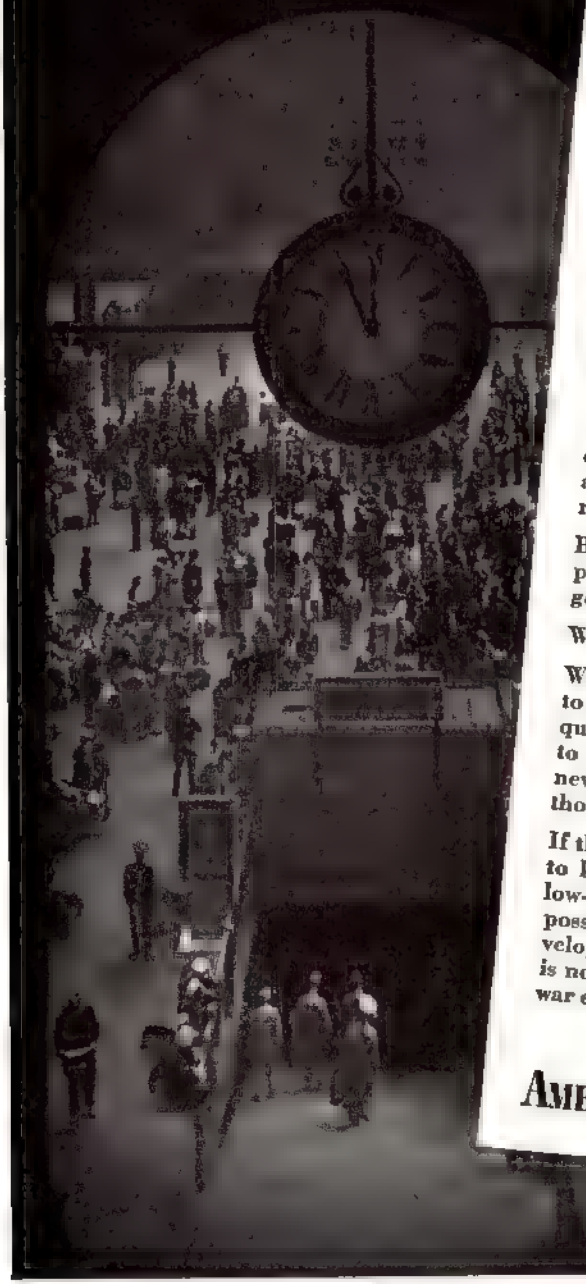
• • •

"It is now estimated that the railroads are moving well over a million troops a month. This is war movement, and must come first . . . Pleasure travelers crowding into passenger train seats may easily deprive a soldier or an essential traveler, who must board a train at the last minute, of necessary accommodations."

JOSEPH B. EASTMAN, *Director*
Office of Defense Transportation

Association of
AMERICAN RAILROADS
Washington, D. C.

till the lights go on again



THE railroads face tasks today that are difficult to picture.

Passenger traffic has just about doubled in the last year.

A troop train starts off every six minutes of the day and night.

A freight train starts off every four seconds.

All this must be handled with just about the same equipment the railroads had before the war.

That means greatly increased wear and tear on engines, cars, rails and other equipment. And till the war is over, and the lights go on again, adequate replacement will not be possible.

But the day is coming when this replacement will be imperative. And it is going to take billions of dollars.

Where will this money come from?

We think the right way to provide it is to permit the railroads to build up adequate reserves now which can be used to pay for new cars and locomotives, new track and other facilities to replace those now being worn out in war service.

If this is done, the railroads will be able to keep on providing the dependable, low-priced transportation which made possible the peacetime growth and development of this country, and which is now an essential part of the nation's war effort.

ASSOCIATION OF AMERICAN RAILROADS

ALL UNITED FOR VICTORY

For the ships and men of America's Merchant Marine, winning the war is today's *one and only job*. The merchant navy is battling side by side with the fighting navy . . . just as it has done in every crisis which involved America's freedom of the seas.

But though we keep steady on our course in this war by sighting on the sun of victory, we can't help seeing a vision beyond. And that vision of a bright future for the American Merchant Marine gives added strength to our fighting efforts.

Today, modern ships of all types are being put into service at an almost incredible rate. New thousands of stout-hearted, capable Americans are being trained to man this great fleet. With such ships and such men we hold the hope that, once again, our nation will know the maritime supremacy of the glorious Clipper Days . . . that once again ships flying the *American flag* and manned by *American seamen* will carry the bulk of our country's trade with all the world.

In such a bright new era, the ships of AGWI and its subsidiaries will play their part, plying between the Americas, as they have for more than one hundred years . . . furthering the growth of vital trade and friendly relations between the United States and our Good Neighbors to the South.

ATLANTIC GULF and WEST INDIES STEAMSHIP LINES

Foot of Wall St., New York

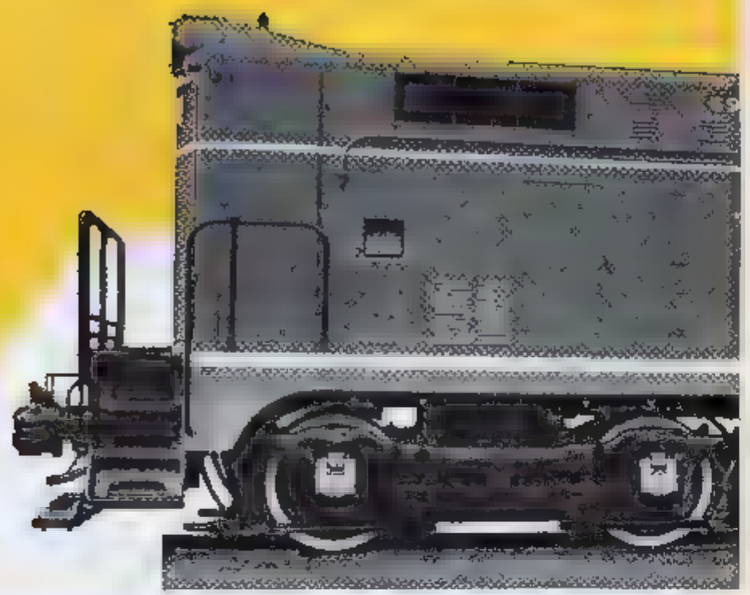
CUBA MAIL LINE ★ PORTO RICO LINE ★ CLYDE-MALLORY LINES ★ SOUTHERN S. S. CO.

AGWI LINES

Cuba, Mexico, Puerto Rico, Dominican Republic, Texas, Florida and the South

★ BUY U. S. WAR BONDS AND STAMPS ★

BALDWIN



Diesel-Electrics

handle freight and passenger cars

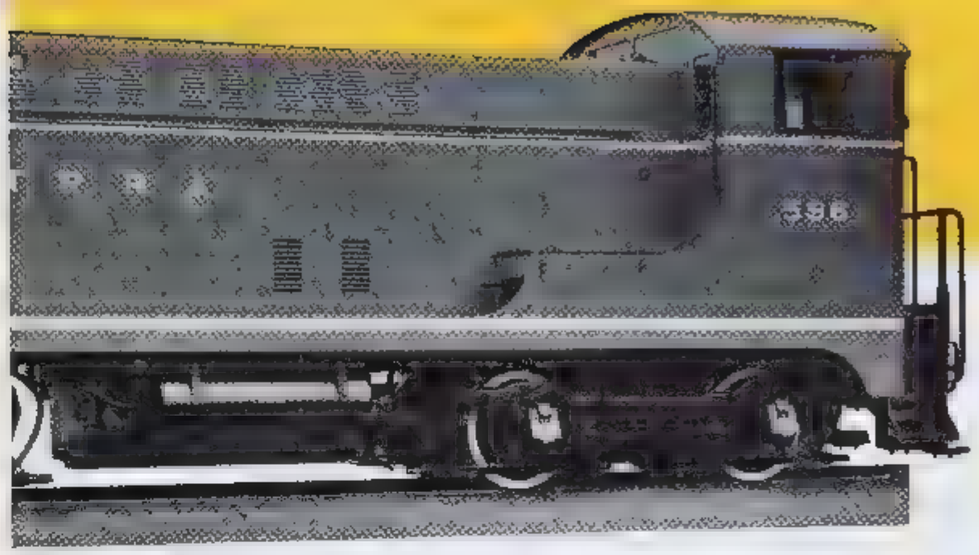
for the Terminal Railroad Association of St. Louis

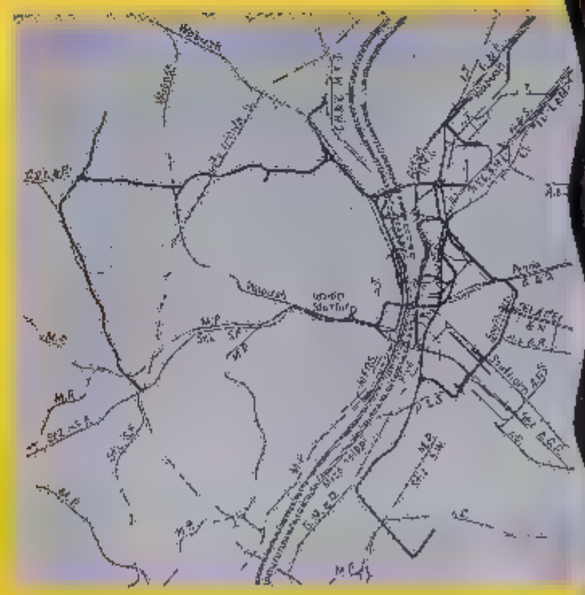
On the lines of the Terminal Railroad Association of St. Louis—the world's largest unified system of freight and passenger terminals—Baldwin diesel-electric locomotives are helping with the gigantic task of handling up to 200 passenger trains and many thousands of freight cars each 24 hours.

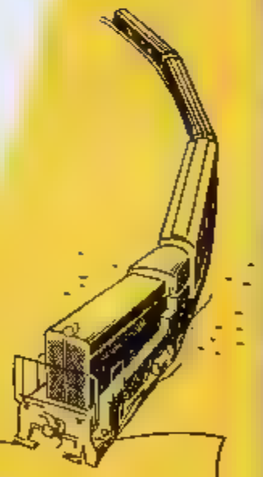
Since 1940, Baldwin locomotives have been meeting the requirements of this exacting service which calls for dependable power with high availability.

Baldwin diesel-electrics have back of them the experience gained in building more than 64,000 locomotives—the experience of 112 years devoted to meeting railroad motive-power problems. More than 50 years of oil-engine experience is built into the Baldwin De La Vergne diesel engines which power these locomotives. Westinghouse, which supplies the transmission equipment, has long been associated with Baldwin in building electric and diesel-electric locomotives.

In addition to building locomotives for America's great railroads, Baldwin has won the Army-Navy "E" Award for the production of tanks, gun tubes, ship propellers, marine diesel engines and other equipment for the armed forces.







THE

LOCOMOTIVE WORKS

Philadelphia

Editor: Have the Nation's railroads helped to build

A Flag with 46,200 Stars

THE service flag of the Bell System had 46,200 stars on May 1. It has a lot more now. Telephone men and women are serving with the armed forces everywhere.

Those who are right in the middle of the fighting realize especially the importance of the telephone job back home.

"Tell the gang," their letters say, "to keep on plugging.

"We wouldn't have the stuff for fighting if the rest of the Bell System wasn't sticking to the job and pushing through the calls that get things done.

"Takes team-work to win a war — especially a big one like this."

BELL TELEPHONE SYSTEM

★ *Your continued help in making only vital calls to war-busy centers is more and more essential every day.*

A new building of the Bell Telephone Laboratories

Reason for Confidence

More than ninety per cent of American scientists are engaged in beating the Germans and Japanese.

More than ninety per cent of American scientific laboratory facilities are devoted to the same task.

American scientists are working at this job six or seven days a week, long hours, with few interruptions.

They are getting somewhere, too.

Every now and then the Germans and the Japanese have an unpleasant surprise.

They find that American science has caught up with them and passed them.

It is reassuring to us and discouraging to our enemies, for American scientific facilities are the greatest in the world. And they are functioning.

Little by little, some of the things that have been developed become public, but most of them you won't hear about until after the war.

But now, without the details, you can have faith that American research — industrial and academic combined — is rapidly giving our fighting forces an advantage.

Along with other American industry, the Bell Telephone System has its own Bell Laboratories — the largest in the world — working overtime for victory.

BELL TELEPHONE SYSTEM

Your continued help in making only vital calls to war-busy centers is a real contribution to the drive for victory.

GIVE HIM A BREAK !

Evening is about his only chance to telephone home. He can get through easier if the wires aren't crowded — and his calls mean so much to him and the home folks. So please don't call Long Distance between 7 P. M. and 10 P. M. unless your calls are really necessary. Many thanks.

BELL
TELEPHONE
SYSTEM

"Just getting the wire laid was a tough problem. Keeping it intact in bombings, shellings and adverse weather is a twenty-four-hour proposition. . . . Wire repair crews are made up of four men. Three stand guard while the other works."
(From story by Sgt. James W. Hurlbut, Marine Corps Combat Correspondent)

Telephone Exchange on Guadalcanal

Marine communications men built it under fire. And it has been kept built. The "Guadalcanal Tel & Tel" covers well over a thousand miles of wire.

That is where some of your telephone material went. It's fighting on other fronts, too. We're getting along with less here so they can have more over there.

Telephone lines are life-lines and production lines in a war. Thanks for helping to keep the Long Distance wires open for vital calls to war-busy centers.

WAR CALLS COME FIRST

BELL TELEPHONE SYSTEM

If you hear the operator say that, it means that the line you want is crowded and other calls are waiting. . . . We're sure you'll understand and co-operate cheerfully – in the interests of better wartime telephone service for *everybody*.

BELL TELEPHONE SYSTEM

"Good thing I was here"

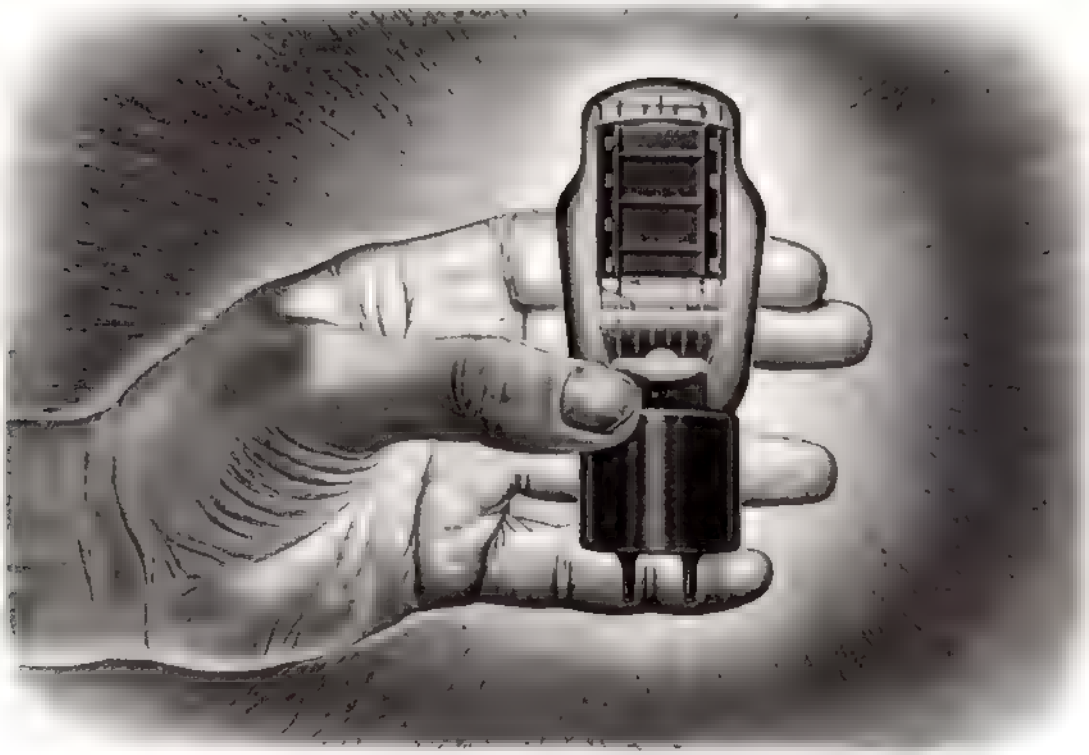
Two-thirds of all Bell telephones are now dial. There would be more if the necessary materials weren't needed for war.

Today's rush of business couldn't be handled without dial telephones. They take care of more than 75,000,000 calls a day.

Even with millions of dial telephones in use, the number of operators increased more than 23,000 last year. The total number is now over 160,000.

BELL TELEPHONE SYSTEM

"IT OUGHT TO GET A WAR MEDAL"



THIS little tube *can't* help you smell. But it *can* help you talk, see and hear. Right now, it helps direct guns, planes, ships. It ought to get a war medal.

It has given birth to a new art called Electronics.

In 1912, in the Bell Laboratories, Dr. H. D. Arnold made the first effective high-vacuum tube for amplifying electric currents.

Vacuum tubes made possible the first trans-oceanic telephone talk by the Bell System in 1915.

Vacuum tubes are now used on practically all Long Distance circuits to reinforce the human voice.

That's why you can talk across the continent so easily.

Over 1,250,000 electronic tubes are in service in the Bell System. Bell Laboratories developed them, Western Electric made them.

But both Laboratories and Western Electric are busy now with war — turning out tubes and putting them to work in many a device to find and destroy the enemy on land, in the air, and under the sea.

After the war, this Bell System army of tubes will work in thousands of ways for peace.

BELL TELEPHONE SYSTEM

HELP THE WAR BY MAKING ONLY VITAL CALLS TO WAR-BUSY CENTERS. THAT'S MORE AND MORE ESSENTIAL EVERY DAY

"Soldier of Service"

"The Voice with the Smile" has always been a part of the telephone business and we want to keep it that way.

Even under the stress of war, the men and women of the Bell System are as anxious as ever to see that you get friendly, courteous service. And they are anxious, too, to give the fastest possible service — especially to those who need speed to help win the war.

You can help them by not using Long Distance to war-busy centers unless it is absolutely necessary. For all your patience and understanding so far, many thanks.

WAR CALLS COME FIRST

BELL TELEPHONE SYSTEM

RAINBOW IN THE SKY

There is good news in the work of American laboratories. It is a reason for confidence in the war — a promise for the future.

Little is said about our scientists because they labor behind locked doors and their work is secret. But the topside of the German and Japanese armies and navies know about them. Things they do turn up at the front and make life harder for our enemies.

After the war, from these same scientists and their laboratories, will come the things that make jobs, comforts, conveniences and luxuries for the American people. They hold out prospects for good use of the opportunities victory will bring.

The Bell Telephone Laboratories, with some seven thousand workers, are among the many research groups that are devoted to winning the war.

When that is done, Bell System scientists will be back on their old job of making your telephone service, and your human contacts over the distances, easier and better than ever.

BELL TELEPHONE SYSTEM

HELP THE WAR BY MAKING ONLY VITAL CALLS TO WAR-BUSY CENTERS. THAT'S MORE AND MORE ESSENTIAL EVERY DAY.

Put yourself in his shoes tonight
Think how eager you'd be to talk to the folks at home, if *you* were in the army and away at camp.
That's something to remember when you're thinking about making a Long Distance call between 7 and 10 o'clock at night.
You see, that's about the only time a soldier can get to the telephone. If the circuits are crowded, he may not be able to reach home before taps.
BELL TELEPHONE SYSTEM

She Still Has "The Voice With A Smile"

War traffic keeps her busier than ever but she manages to keep calm and pleasant.

She still has "The Voice With A Smile" even when the lights are thick on the Long Distance switchboard and the circuits are crowded. Even when she has to ask you to—

"Please limit your call to 5 minutes. Others are waiting."

That's to help everybody get better service and you couldn't ask for a better reason than that.

BELL TELEPHONE SYSTEM

Pardon Us... *while we attend to a little matter overseas*

WE wish we could say, as we could a short time ago, that any high-grade camera dealer anywhere could supply you with any Filmo Motion Picture Camera or Projector or Filmosound Projector you might desire. But Filmo Cameras, Projectors, and Filmosounds have gone to war. Wherever American men are fighting —or training, Filmo motion picture equipment is likely to be with them. That, we know you agree, is as it should be. Winning the war comes first.

To the ultimate victory of America and our Allies, Filmo Motion Picture Cameras and Projectors are rendering vitally essential contributions. The Filmo slogan—"What you see, you get"—pleasant in peace, is *priceless assurance* in war. What men in training see on the motion picture screen, they *get!* To men in combat, the unfailing eye of the camera provides indisputable record of achievement and the key to better weapons and better tactics.

The craftsmen of Bell & Howell who made the slogan mean what it says to thousands of home movie makers are now working *all out* to provide our fighting forces with the finest motion picture equipment and sighting devices American ingenuity can produce.

Filmo

Bell & Howell Company, Chicago; New York; Hollywood; Washington, D. C.; London. *Established 1907.*

MOTION PICTURE CAMERAS AND PROJECTORS

BUY WAR BONDS

PRECISION-MADE BY

Bell & Howell

Scene from "Captain Caution," a United Artists release, available to approved non-theatrical locations through B&H Filmosound Library.

Hometown Christmas Eve... *in Salamaua*

White, hot beach and steaming jungle instead of snow and spangled Christmas trees... K-rations instead of duck and stuffin'... yet even here, in the midst of war... on a strange, unfriendly strip of land six thousand miles away... one familiar, well-loved bit of *every* man's home town helps fighting men keep Christmas. *Movies!*

Out there... and on a dozen other fronts... in camps... on fighting ships, Christmas Eve will be a busy night for Filmosound Projectors. They'll be flashing familiar Hollywood faces on countless screens reminding fighting men that the *spirit* of Christmas still *lives* in the world they're fighting for.

This is *morale.* It is part of the job that B&H film equipment is doing in this war. Millions of men are trained thoroughly and swiftly with Filmosound-projected movies. Battles are recorded by Filmo Cameras... and special devices built by B&H are giving our forces the *winning* edge. Bell & Howell Co., Chicago; New York; Hollywood; Washington, D. C.; London. *Est. 1907.*

*Trade mark registered

*Opti-onics is OPTIcs . . . electrONics . . . mechanICS. It is research and engineering by Bell & Howell in these three related sciences to accomplish many things never before obtainable. Today Opti-onics is a WEAPON Tomorrow, it will be a SERVANT... to work, protect, educate, and entertain.

Filmo

"WHAT YOU SEE-YOU GET"

Products combining the sciences of OPTIcs • electrONics • mechanICS

PRECISION-MADE BY

Bell and Howell

Comrades in Arms

on Every Front

THEY'RE giving a real account of themselves—those fighting men of ours out there on the far-flung fronts of this global war. And they're making a real record of what they're handing out. For wherever they fight, Filmo Motion Picture Cameras and Projectors are fighting with them. They're comrades in arms on every front . . . pals during leisure hours . . . buddies during battle.

Back in the training camps, too, from Iceland to Australia—motion pictures of actual combat are flashed on the screen and our men learn what not to do when fighting a Zero . . . what not to do in a clash with German tanks . . . and where to "scratch a flat top."

BUY WAR BONDS

To provide motion picture cameras, projectors, and sighting devices needed by our men in training and in combat is the job on which all of our energy, facilities, and skill are now concentrated and will continue to be until Victory. We know you agree that this job must come first.

Filmo

Bell & Howell Company, Chicago; New York; Hollywood; Washington, D. C.; London. *Established 1907.*

MOTION PICTURE CAMERAS AND PROJECTORS

PRECISION-MADE BY

Bell & Howell

Filming and FIGHTING for Freedom!

Precision does it! The precision of Bell & Howell equipment—the craftsmanship that made *"what you see, you get"* an honest slogan for Filmo Motion Picture Cameras in peace, is proving itself indispensable in America's fight for freedom.

And Filmo Motion Picture Cameras and Projectors *are* fighting for freedom. In the training camps, motion pictures are showing men *how to fight to win.* They learn faster and more thoroughly—because "what they see—they get." In combat, motion pictures prove achievement and point the way to improved weapons and tactics.

BUY WAR BONDS

Bell & Howell craftsmanship is devoted, *all out,* to supplying our fighting forces with unsurpassed motion picture equipment and sighting devices—so that "what they see—they get."

Filmo

Bell & Howell Company, Chicago; New York; Hollywood, Washington, D. C.; London. *Established 1907.*

MOTION PICTURE CAMERAS AND PROJECTORS

PRECISION-MADE BY

Bell & Howell

"How to stay alive... *in ONE easy lesson*"

You won't be seeing movies like this at your neighborhood theater. In fact, you'd likely rather *not* see them. They're pretty grim. They show how easy it is to stop a bullet . . . if you're careless . . . and how to stay healthy by using common sense.

Filmosound Projectors are flashing lifesaving training films on Army camp screens all over America . . . revealing enemy tactics to our fighting men . . . schooling them in war-wise caution and courage. Special films, that you may never see, explain almost every phase of modern warfare . . . and in every branch of service, Filmosound Projectors and Filmo Cameras help carry the tremendous training load . . . help weld millions of green recruits into a tough, hard-hitting *Army*.

And so your peaceful, pleasant home movies will have to wait . . . until Filmosound equipment has completed this cold-blooded, *necessary* task. And when it's done there will be an America for you to film that will be finer and stronger than it ever was before.

It's *worth* the waiting.

Bell & Howell Co., Chicago; New York; Hollywood; Washington, D. C.; London. *Established 1907.*

* Trade-mark registered

*Opti-onics is OPTIcs... electrONics . . . mechanICS. It is research and engineering by Bell & Howell in these three related sciences to accomplish many things never before obtainable. Today Opti-onics is a WEAPON. Tomorrow, it will be a SERVANT . . . to work, protect, educate, and entertain.

Products combining the sciences of OPTIcs • electrONics • mechanICS

PRECISION-MADE BY

Bell and Howell

Filmo

BUY WAR BONDS AND STAMPS

A 4 ★ HIT *in the* SOLOMONS

On the screen, *It Started with Eve*
A Universal Production

Look at them and be proud of them! As tough a bunch of hard-fighting marines and soldiers as ever outslugged the Japs. But now in a moment of leisure in a jungle setting, a screen goes up and a Bell & Howell Filmosound gives them the latest smash hit from Hollywood. Tired bodies are refreshed, taut nerves are relaxed, and they go back to their job of fighting—*fit to fight.*

To bring the movies of the homeland to its fighting men all over the globe is but part of the Bell & Howell war effort. For the home front there are Filmosound Projectors and the Filmosound Rental or Purchase Library of over 3,000 subjects.

Filmo cameras and projectors are also helping train our armed forces. From movies made and projected with this equipment they learn about the weapons, tactics, and strategies of war.

Some of the Most Timely Filmosound Library Subjects
Emergency First Aid ... Gardens for Victory ... Caucasian Barrier ... Milestones of Democracy ... Winning Your Wings (with Jimmy Stewart)
—and hundreds of others. Write for details

Filmo

Bell & Howell Company, Chicago; New York; Hollywood; Washington, D. C.; London. *Established 1907.*

MOTION PICTURE CAMERAS AND PROJECTORS

PRECISION-MADE BY
Bell & Howell

"Nice goin', baby!"

First in the automotive industry to fly the Navy "E" with three stars, Fisher has also been awarded the Army-Navy "E" for its ahead-of-schedule tank production.

SO it goes, on a dozen fronts — American industry backing up American men with fire-power, with a rising flood of war tools and transport, with a heightening volume of all kinds of ordnance.

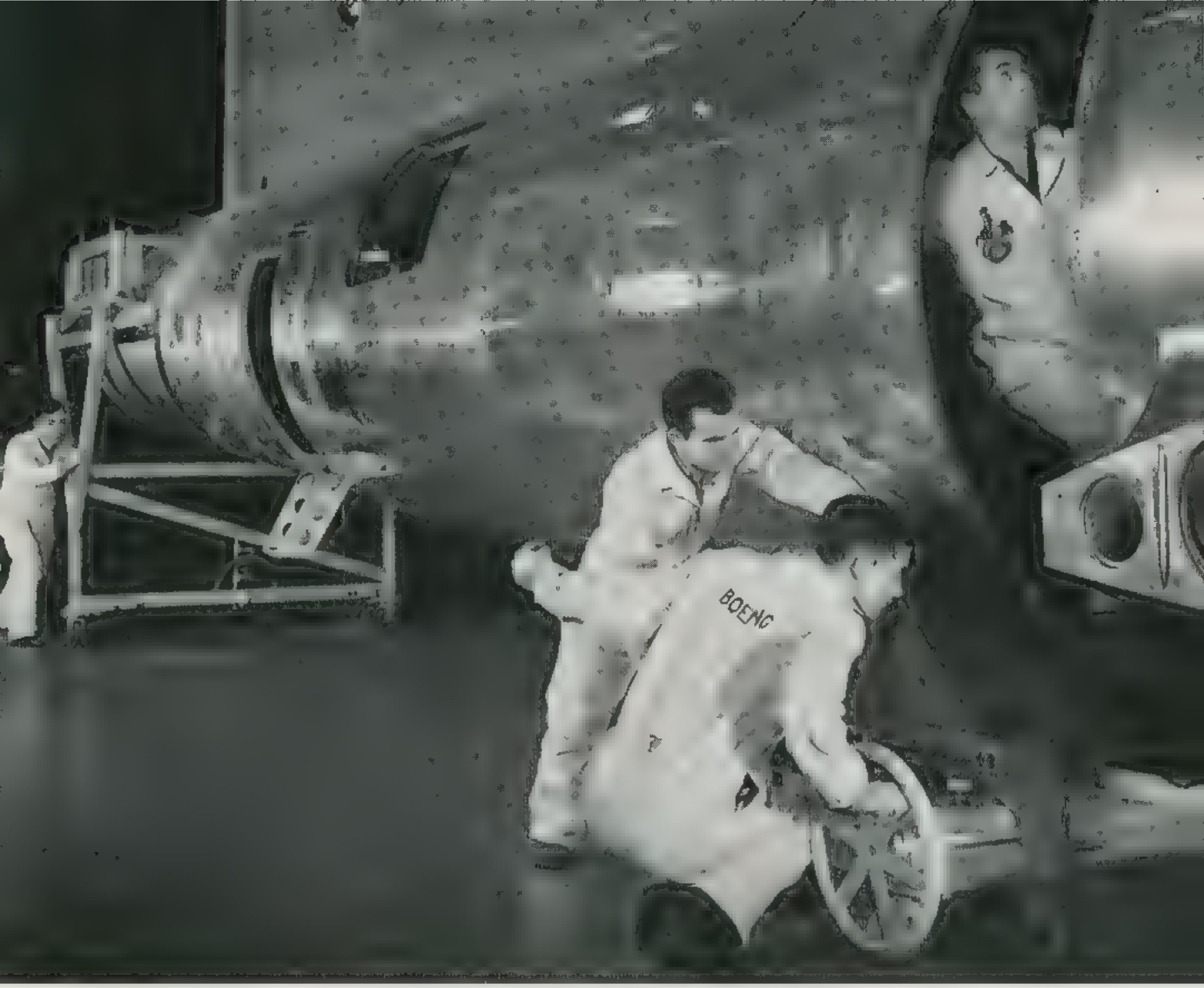
The Fisher contribution to this effort, in terms of volume, is huge. But volume alone fails to tell the whole story of the Fisher effort. For the long-acquired skills of the Fisher craftsmen are today playing a part of national importance. They have a vital and specific value of their own.

Our country's leaders realize that it takes precision men to do a job precisely — that extreme standards of mathematical exactness must be met in order to surpass the technical excellence of our enemy's war machines. And Fisher, as a precision center, has been honored with a number of very difficult assignments.

Our fighting men are doing the big job. But the vicious snick of our well-turned breech-blocks, the roar of our tanks, the bark of our anti-aircraft guns are music to their ears.

armament BODY BY Fisher

DIVISION OF GENERAL MOTORS



Wedding without bells

The scene above is a familiar one at the Boeing plant in Seattle.

It shows the front and rear halves of a Boeing Flying Fortress* fuselage being joined in mechanical wedlock on the final-assembly floor . . . each section so precisely and perfectly manufactured that joining them together, and "hooking up" pre-installed wiring, controls and cables, is a matter of minutes.

In manufacturing so complicated a product as the huge Boeing B-17 under war conditions, the *best* production system is the one which is *most compact* (for it is essential to make every unit of plant space a production asset), *most flexible* (for new combat experience may dictate that design be modified "overnight" without holding up production), and *fastest* (for the scene above can never be familiar *enough*, until the war is won).

The Boeing system of short-flow, multiple-line production fulfils all three of those conditions, and results in *the highest output in the aircraft industry per man, machine, and unit of plant space.* Essentially, it is a system based on "breaking up" the airplane into sections, completing each section on a short assembly line, and finally wedding the major sections into a completed airplane which could, if necessary, be flown away from the final inspection station.

It is this manufacturing skill and efficiency — combined with Boeing know-how in design, research and engineering — which have made Boeing-designed and Boeing-built Flying Fortresses, Stratoliners* and Pan American Clippers so outstanding in the aviation world.

• • •

It is these things, too, which will some day make the phrase "Built by Boeing" stand for better peacetime products in a free world.

DESIGNERS OF THE FLYING FORTRESS • THE STRATOLINER • PAN AMERICAN CLIPPERS **BOEING**

*THE TERMS "FLYING FORTRESS" AND "STRATOLINER" ARE REGISTERED BOEING TRADE MARKS

SCENE FROM THE WARNER BROS. MOTION PICTURE, AIR FORCE

There's a new glamour girl in Hollywood

She doesn't wear sweaters, or pose for glamour photographs. . . . She's never seen at night clubs. . . . And though her autograph is well-known in certain French and German cities, nobody has ever *asked* her for it.

Yet Mary Ann—star of Warner Brothers' new picture, "Air Force"—passed every screen test with flying colors. And that's no more than you'd expect from a Boeing Flying Fortress!*

"Air Force" is the story of a Boeing B-17, and the gallant hell-for-leather crew that flew her to glory . . . *via* Pearl Harbor, Wake Island, Manila, the Coral Sea and Australia. Made in collaboration with the Army Air Forces, it's a picture to make your heart skip a beat . . . then beat faster.

What the camera *doesn't* show is an invisible supporting cast: the Boeing designers and engineers, the technicians and researchers, the laboratory men and the craftsmen and workmen who originated the Flying Fortress and now keep a steady stream of B-17's and other war planes flowing from Boeing plants—in Seattle, Wichita, Canada.

More than twenty-five different *kinds* of engineering know-how are represented by several thousand Boeing engineers. Daily they challenge the word "impossible," in a 'round-the-clock effort to do the job *better* in *less time.*

• • •

Some day this effort will be applied to making life richer and happier, in a peaceful world. For Boeing engineering talent and experience, while devoted primarily to the continued advancement of aeronautics, also encompass resources which are relevant to almost every phase of civilized life.

DESIGNERS OF THE FLYING FORTRESS • THE STRATOLINER • PAN AMERICAN CLIPPERS **BOEING**

*THE TERMS FLYING FORTRESS AND STRATOLINER ARE REGISTERED BOEING TRADE MARKS

"Everybody talks about the weather...

. . . but nobody does anything about it." No longer is this famous old quotation true. For Boeing engineers *have* done something about it!

They designed the Stratoliner* —the only transport airplane built to fly in the substratosphere, *above* the weather—where the air is thin, but smooth—where greater speed, safety, passenger comfort, and economical operation are possible.

In order to open up this new super-highway of the air, Boeing engineers designed the first cabin with automatically controlled atmosphere-conditioning. Thus at 20,000 feet, where the bitter-cold air is too rarefied for sustained breathing, the atmospheric "altitude" inside the Stratoliner is maintained at a level at which passengers and crew are comfortable. That's why the Stratoliner represents the greatest advance yet reached in the design and manufacture of commercial airplanes... a guide-post to the future of flight.

Today, Boeing Stratoliners have discarded their gleaming mufti for drab camouflage, and employ their great speed and huge load capacity on errands of war . . . shuttling across seas and continents, hurrying men and materials out to the front lines.

And in another way, too, the Stratoliner is helping to win the Battle of the Skies . . . supplementing the work of another Boeing-designed and Boeing-built airplane—the Flying Fortress.* For the engineering and manufacturing lessons learned in building the Stratoliner and the Fortress are today being applied to creating still better military planes.

• • •

The engineering and production know-how acquired by Boeing in many fields — structural, electrical, metallurgical, aerodynamic and a score of others—this know-how will some day be converted . . . from making America victorious, to making the fruits of science and industry available to free men everywhere.

Engineering leadership . . . manufacturing efficiency . . . now and tomorrow, these are implicit in the phrase "Built by Boeing."

DESIGNERS OF THE FLYING FORTRESS • THE STRATOLINER • PAN AMERICAN CLIPPERS **BOEING**

*THE TERMS "FLYING FORTRESS" AND "STRATOLINER" ARE REGISTERED BOEING TRADE-MARKS

Lots of Uncle Sam's Chillun Got Wings

First-class fighting pilots are made — not born.

And to make enough pilots to fight a global war . . . enough navigators . . . enough bombardiers . . . requires training planes, training planes and *more* training planes.

Since Hitler marched on Poland, more primary training planes have come from Boeing's Midwestern plant than from any other single American plant.

That's why Boeing men and women get an extra-special thrill when they read of American bombers and fighters hitting the enemy where it hurts. They know the odds are that the men in those planes got their "primary" in a Boeing trainer.

Boeing training planes include the Army's PT-17, the Navy's N2S-2 and N2S-3, and the new bomber-crewtrainer AT-15 in which pilots, bombardiers, navigators, gunners and other crew members are given integrated training. And at training fields in Great Britain and China . . . in Canada, Mexico and Cuba . . . in six South American republics . . . Boeing planes are helping young men to sprout their wings of war.

• • •

The engineering and manufacturing skill expressed in Boeing primary trainers, crewtrainers, Flying Fortresses, Stratoliners* and Pan American Clippers will some day be directed to peacetime pursuits. Then Boeing wartime research . . . in radio and refrigeration, heating and hydraulics, soundproofing and a score of other engineering fields . . . will make the fruits of victory ripen sooner and sweeter.*

DESIGNERS OF THE FLYING FORTRESS • THE STRATOLINER • PAN AMERICAN CLIPPERS **BOEING**

*THE TERMS "FLYING FORTRESS" AND "STRATOLINER" ARE REGISTERED BOEING TRADE MARKS

SCRATCH ANOTHER "Impossible"

The Army-Navy "E" proudly flies over Buick plants in both Flint, Mich., and Melrose Park, Ill., having been awarded to Buick people for outstanding performance in the production of war goods.

ONE of the toughest assignments ever put up to the Ordnance Department of the U. S. Army had to do with this seemingly simple item shown here.

It is a shell case for a 75-mm gun. Ordinarily it is made of easily-worked brass. But brass was desperately scarce. The tough and urgent job was to make it instead from a billet of plain, ordinary, run-of-the-mill steel like this:

To work in our fast-firing 75's, this shell case must have certain definite and dependable characteristics, and no maybes about it.

It must be *exactly* right as to size.

It must not be one iota too hard at any point, lest it crack in firing, nor one iota too soft, lest it expand and jam the breech block.

It must stand repeated firings and remain reloadable.

The job of working out the method of accomplishing this was a long and puzzling one that called for many minds and much experimenting.

But today these cases are coming from Buick plants at a rate that runs in the hundreds of thousands every month.

And they are coming out true in every respect to the rigid Army specifications which obviously must apply to such important materiel.

So you can scratch off another "impossible" as an accomplished fact.

You can chalk off millions of pounds of precious brass saved for other vital military jobs where no alternate material can be used.

And you can go ahead and buy more War Bonds confident that this and like forms of American industrial will-to-win are making each Bond buy the utmost for Victory.

VICTORY is our Business GM

WHEN BETTER AUTOMOBILES ARE BUILT BUICK WILL BUILD THEM

BETTER BUY BONDS

BUICK DIVISION OF **GENERAL MOTORS**

Unsung Hero number one

CALL him that to his face and he'd say "Nuts!"

Just the same, this earnest fellow, armed with nothing more deadly than a kit of service tools, is doing a plenty good job of throwing monkey wrenches into enemy plans.

We ought to know, because one of Buick's many war jobs* is training soldiers to service Buick-built Pratt & Whitney aircraft engines.

Ever since May, at the rate of 50 a week, we've been steering them through a tough, eleven-week course that has been singled out for official commendation as the most outstanding school of its district by reason of its 94.3% efficiency rating.

We're turning them back to the Air Corps in a steady flow now — trained, keen and able mechanics who know how to keep engines turning up their peak power for any air-borne task that comes along.

They're good, clean, earnest, intelligent American kids who are working like blazes at a job with little respite and less hope for glory.

We know. We've met a lot of them—and we're proud to have known every single one.

• • •

*PRODUCTION NOTE: *You'll be glad to know we are meeting schedules on every one of our war assignments: Pratt & Whitney engines for bombers, steel shell casings for our busy guns, vital parts for tanks, and so on and so on.*

★ ★ ★ BUICK DIVISION OF GENERAL MOTORS ★ ★ ★

"Buy U. S. War Bonds—They Identify You"

FOUND:

THOUSANDS OF TONS OF BRASS!

IN one of Buick's busy plants, large calibre shell cases are now being built of *steel* instead of hard-to-get *brass*.

Coming from the line by the thousands, these cases mean an important saving in a highly critical material.

But, you may ask, doesn't this simply mean that our already-burdened steel-producing facilities have to turn out just that much more steel?

The answer is—not at all! Through careful redesign and development of new methods on other of our war jobs, Buick has effected important savings in steel too.

These are more than enough to offset a load on the steel mills that might have been involved in this switch from one material to another.

It is very much like finding several million pounds of brass every year—not by accident, but in reward for a patient, careful process that goes on constantly in Buick plants.

We're *always* looking for ways to save materials of any kind. Even a fraction of a pound per piece produced is not too little to get our prompt attention.

Such care pays, as this instance proves. It makes all materials stretch—and there is no better way of making sure our fighting men get plenty of what they need to win.

BUICK DIVISION OF **GENERAL MOTORS**

EAGLES OF THE NAVY—In breath-taking maneuvers—even a 9-G pull-out dive—Ciné-Kodak Special proved its reliability.

The Movie Camera that can take a "9-G pull-out" dive

WHEN our Navy made those two magnificent training films, "*Eagles of the Navy*" and "*Champions Training Champions*" there was a good reason for choosing Ciné-Kodak to do the job.

The reason was that they needed a movie camera as tough, in its way, as the machines and the men were in theirs.

Take the "9-G pull-out" dive for instance. If you're a pilot, you're apt to "black out" during this dive. Your heart actually stops, for a few seconds.

But Ciné-Kodak doesn't "black out." Its precision-made governor and other working parts continue to run smoothly even when it hits the terrific jolt of a "9-G pull-out" dive.

Because Ciné-Kodak can "take it"—because it goes on operating with accuracy and dependability under incredibly rough conditions, it is used by our Army and Navy, Air Force and Signal Corps, to record actual fighting at the front, as well as for the valuable work of making training films.

* * *

If you are the fortunate owner of a Ciné-Kodak—be proud of its war record. Take care of it. Ask your Ciné-Kodak dealer to check and see that it's in A-1 working order. Use it, these days of limited film, to make black-and-white or Kodachrome movies of the home front . . . to show your soldier or sailor when he comes back . . . Eastman Kodak Company, Rochester, N. Y.

Ciné-Kodak

Eastman's Finer Home Movie Camera

An American Tradition

—HOME MOVIES ON CHRISTMAS NIGHT

THIS is a scene from the reel they made the last time Jim was home on leave. And so it is particularly precious to them this Christmas night, when their thoughts are so much with him . . . when, faithful to a family custom of years' standing, they set up the projector, turn out the lights, and relive the happy yesterdays.

Of course film is scarce, although you may be able to get a roll. But in any event there are the reels of other years, ready and waiting to make this Christmas a memorable one.

Have your Ciné-Kodak dealer check your projector . . .

If you haven't used your projector as often as usual during this busy year, have your Ciné-Kodak dealer clean it, oil it, and check it; then you can be sure it will be running smooth as silk . . . Eastman Kodak Company, Rochester, N. Y.

Life is a movie—**CINÉ-KODAK** *gets it all*

That Extra Something!

...You can spot it every time

When war correspondents say that Coca-Cola is the drink of our fighting men, you know there is a reason for it. What drink offers such delicious taste and downright refreshment?

One tells how a Ranger, returned from Dieppe, asked for Coca-Cola in preference to anything. Another cables that the main event of the week for the doughboys at a desolate South Pacific outpost was 12 bottles of Coke. We read such things in the papers regularly.

Coca-Cola had to be good to earn fast friendship like that with our Armed Forces. Coca-Cola is good. It's made that way with a finished art and choicest ingredients. And with a taste all its own. Truly, the only thing like Coca-Cola is Coca-Cola, itself.

You could see this going on many places in the world. When our soldiers get a chance to enjoy a pause, they make it *the pause that refreshes* with ice-cold Coca-Cola

Although war has changed and disrupted so many things in their lives, our fighting forces overseas are so often delighted to find in far-off places an old familiar friend . . . Coca-Cola . . . being bottled in Allied Nations all over the globe, just as it is at home.

COPYRIGHT 1943, THE COCA-COLA COMPANY

The best 5¢ *is always the better buy!*

Have a "Coke" = Welcome, Friends

. . . or how to get along in Alaska

The American soldier in Alaska meets up with many things that remind him of home. One of them is Coca-Cola. *Have a "Coke"* says he to a stranger, and in one simple gesture he has made a friend. In three words he has said, "You and I understand each other". *The pause that refreshes* works as well in the Yukon as it does in Youngstown. From Atlanta to the Seven Seas, Coca-Cola has become the high-sign between kindly-minded strangers, the symbol of a friendly way of living.

* * *

Next to mothers, wives, sweethearts and letters from home, one thing our soldiers overseas mention most is Coca-Cola. So you'll be delighted to know they frequently find it—bottled on the spot—in over 35 Allied and neutral nations 'round the globe.

"Coke" = Coca-Cola

It's natural for popular names to acquire friendly abbreviations. That's why you hear Coca-Cola called "Coke".

COPYRIGHT 1943, THE COCA-COLA COMPANY

E. F. BURTON, Chief Engineer of the parent plant, one of many Douglas executives who depend upon Dictaphone, says: "We have found Dictaphone adaptable to a wide range of uses, not merely for dictation of correspondence but even for such special purposes as recording data during test flights."

VIVIAN ENGELBRECHT, secretary to A. M. Rochlen, Douglas Director of Industrial and Public Relations, says: "The executive for whom I work has become a human dynamo, but our Dictaphone enables me to keep pace."

OFFICE ORGANIZATION at Douglas is streamlined. The Parts Sales Department uses Dictaphones to record parts lists and data to speed shipments.

Helping to MAKE EVERY MINUTE COUNT at Douglas . . .

COORDINATING the huge army of Douglas production soldiers, and solving the daily technical and administrative problems require enough departments to run a good-sized city. It's a tough job—a job that requires the full use of every modern time-saving and labor-saving tool available.

That is why Dictaphone equipment is so important a part of the Douglas organization.

Giving Wings to Words . . . Here, as at hundreds of other vital war plants, Dictaphone dictating machines are helping hard-pressed executives do *more work in less time.*

Some of these men seldom write a letter. They are using their Dictaphones to issue instructions, to record flash ideas and long reports, to digest government rulings, and to prepare analyses of engineering findings. They are dictating memos to avoid needlessly interrupting the work of their associates and because they can dictate at any time without requiring the presence of a secretary, they are finding it convenient to confirm important phone calls, oral instructions and conference highlights *on the spot.*

Munitions and Materiel . . . All Dictaphone factory facilities are now engaged in turning out remote control aiming and firing devices for anti-aircraft guns, and other precision instruments for the armed forces and war industries. Thus the skill developed by Dictaphone Corporation in the manufacture of Dictaphone equipment is contributing in helping to provide actual munitions and materiel for America.

CENTRAL Transcribing Department at Douglas where Dictaphone cylinders are swiftly and skilfully transcribed.

DICTAPHONE

ACOUSTICORD DICTATING EQUIPMENT
ELECTRICORD RECORDING EQUIPMENT

The word DICTAPHONE is the Registered Trade-Mark of Dictaphone Corporation, Makers of Dictating Machines and Accessories to which said Trade-Mark is Applied.

NG-2-43

FREE CARTOON BOOK—Shows uses for the Dictaphone you probably never thought about. Mail the coupon and we'll mail the book.

DICTAPHONE CORPORATION
420 Lexington Ave , New York, N. Y.
In Canada—Dictaphone Corporation, Ltd.
80 Richmond St., West, Toronto, Ontario

Please send me your free cartoon booklet.

Name_____

Address_____

BORING THROUGH ragged gray clouds a hundred miles from New York, the giant Boeing Stratoliner calls LaGuardia Field on the interphone, giving position . . . speed . . . altitude, receiving in turn information on weather ahead and complete landing instructions. Back and forth fly questions and answers . . . and every syllable is electrically recorded!

The recording may be filed and played back any time. Should the flight ever figure in the investigation of an accident or some irregularity in the observance of flying regulations, a running account of all instructions and acknowledgments is available.

Batteries of Dictaphone Electric Recorders are now in operation at airway traffic control centers 24 hours a day, helping to do a vital war job well.

STRATOLINER LANDING TWO PLACES AT ONCE

This is only one of the many innovations in the field of electric recording, which has been created in the Dictaphone Research Laboratories at Bridgeport, Conn., by our sound engineers.

Today, the vast background of skill and knowledge which Dictaphone has acquired during years of effort to make better dictating equipment is available to the armed services and war industries. Wherever the human voice must be recorded and reproduced, there Dictaphone can speed activity.

During the war, the Dictaphone method of dictation serves more effectively than ever, saving precious time and effort for harassed executives. After the war, improvements in electric recording hastened by today's necessity will be giving new satisfaction in Dictaphone-equipped offices.

Dictaphone Corporation, 420 Lexington Ave., New York 17, N. Y.

DICTAPHONE

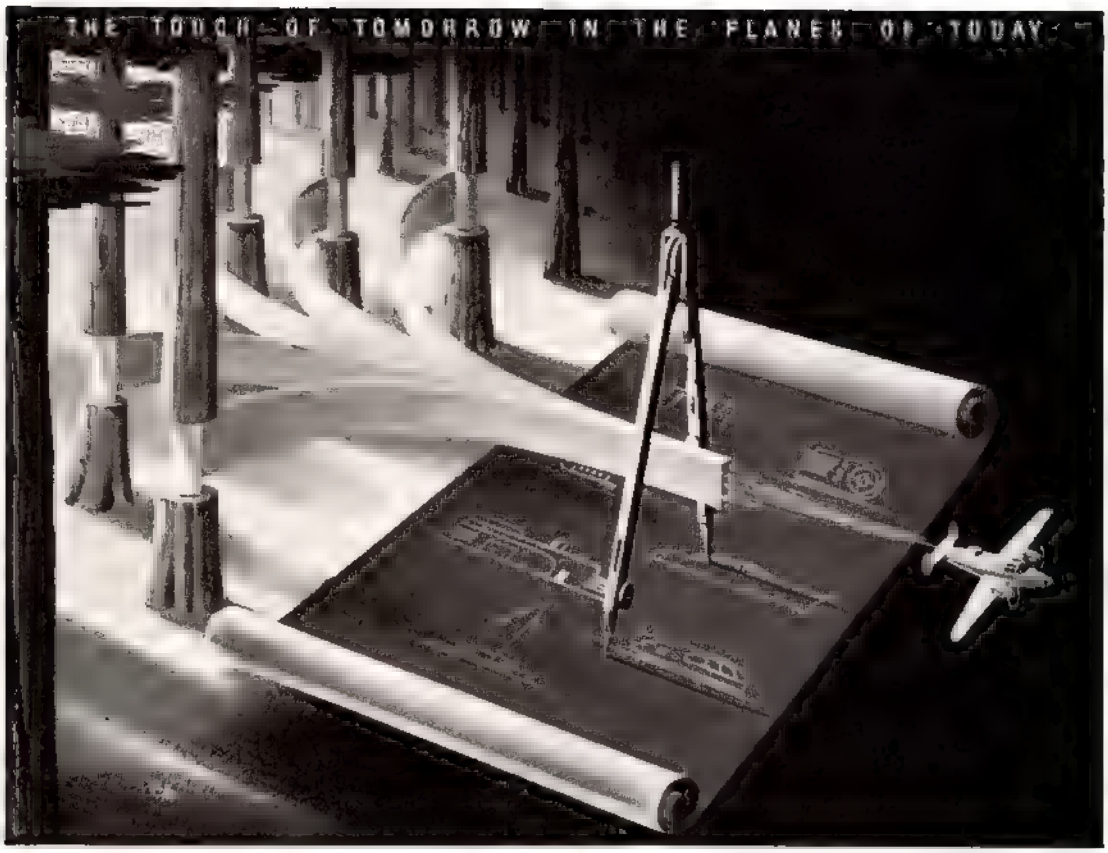
DICTATING AND RECORDING EQUIPMENT

The word DICTAPHONE is the registered trade-mark of Dictaphone Corporation, makers of dictating machines and other sound recording and reproducing equipment bearing said trade-mark.

Sept 11 1943

THE NEW YORKER

Price 15 cents



A New Industry Comes Out of the Woods

Plywood, the structural material of the future, takes to the skies today. Planes of many types are now being made of plywood, superior in certain characteristics even to fine steel or aluminum.

With war-time expansion of plane production, Fairchild foresaw shortages in the light metals. Research and engineering development of plywood at Fairchild were given a great stimulus. New data and new techniques were developed, made possible by recently perfected adhesives. Plywood craftsmanship jumped ahead many years in a few short months.

By a patented Fairchild process, known as DURAMOLD, layer-on-layer of wood, laid cross-grain and permanently joined with special resins under heat and pressure, may now be molded into single and multi-curved structural surfaces of consistently high quality.

DURAMOLD possesses some distinct advantages over metal aircraft surfaces. It is more fire resistant. It makes lighter, stronger planes; the rigid DURAMOLD shell is its own support, eliminating the need for a great clutter of internal stiffeners, bulkheads, and other reinforcing members necessary in thin metal construction. It does not wrinkle nor buckle in the airstream, as does a metal surface. There are no non-flush rivets, as no rivets are required. Thus, it is *smoother* in the air . . . horsepower is not handicapped by increased "drag." The plane can fly faster, is more maneuverable and has greater lift and range in the field of high-speed performance.

Production of DURAMOLD structures in spars, flat pieces, and complex curved surfaces is now concentrated within the aviation industry. Its purposes are 100% the purposes of war. But, when victory is won, the techniques, facilities and craftsmanship of a new industry can and will be applied to a multitude of peace-time products.

DURAMOLD, another example of those Fairchild achievements which put the "touch of tomorrow in the planes of today," is available to all "priority" manufacturers.

BUY U. S. WAR BONDS AND STAMPS

FAIRCHILD ENGINE AND AIRPLANE CORPORATION

30 ROCKEFELLER PLAZA, NEW YORK

Ranger Aircraft Engines Division
Farmingdale, L. I.

Fairchild Aircraft Division
Hagerstown, Md. . . . Burlington, N. C.

Duramold Division
New York, N. Y.

Reunion on the Field of Battle

These are Fairchild alumni—fighting men from Norway, Canada, the U.S.A.

Though they come from different parts of the world, these skillful warriors of the United Nations Air Forces have much in common.

Typical of thousands of fliers on every fighting front, each was given an intensive course in a Fairchild Primary Trainer as one important step on the road to winning his wings. Their meeting upon some distant airfield is virtually a reunion of "old grads" of the same Alma Mater.

It is easy to understand why the Air Forces choose Fairchilds for primary training.

There is the element of added safety. For example: quick take-offs and steep climbs can be performed by novices in a Fairchild Trainer without danger of stalling, which caused so many fatalities in the last war. The trainee, behind a 175 or a 200 horsepower Ranger engine, just "pours on the coal" and he's quickly in the air with a lot of runway to spare.

And when it comes to acrobatics, which give a trainee an intimate feel of the controls and teach him instinctive flying, a Fairchild is the answer to an instructor's prayer. No need to crush the student's confidence by telling him not to dive at 200 miles an hour. Just teach him all the tricks in the bag, with the full knowledge that safety has been built into every inch of every Fairchild Trainer.

Maneuverability with great safety, and rugged landing characteristics—for which *all* Fairchild trainers are famous—provide the foundation stone of Fairchild's "touch of tomorrow in the planes of today."

BUY U. S. WAR BONDS AND STAMPS

FAIRCHILD ENGINE AND AIRPLANE CORPORATION

30 ROCKEFELLER PLAZA, NEW YORK

Ranger Aircraft Engines Division, Farmingdale, L.I. • Fairchild Aircraft Division, Hagerstown, Md.... Burlington, N.C. • Duramold Division, New York, N.Y.

War Is a Skill Our Sons Must Learn

Every American soldier fights with courage and self-sacrifice. But these alone do not win wars. War also demands high technical skill because it is a struggle not only of men against men, but also of machine against machine—tanks, planes, battleships. Without training in the use of these instruments of war, soldiers today are without weapons!

One weapon in this war—the airplane—calls for more personal skill than any other. And one of the most critical phases in a pilot's training is his step-by-step transition from primary trainers to combat planes. These steps cannot be abrupt, yet time demands that they be swift. Therefore, along with the relative stability and safety required in a training plane, Fairchild engineered into its trainers certain definite characteristics of the combat plane. Thus, they get a pilot ready for his second step while teaching him the first!

Fairchild training planes—primary trainers, bomber crew trainers and gunnery trainers—are being used on United Nations training fields throughout the western hemisphere. They are powered by Fairchild Ranger aircraft engines. They reflect the 20 crowded years which Fairchild engineers have devoted to "creating the plane for the purpose." The "touch of tomorrow" in Fairchild engineering indicates courage to try new things. We shall need many new things to further prosecute this war against our resourceful enemies. Fairchild has quite a number on the way—to add to those already on its record!

FAIRCHILD ENGINE AND AIRPLANE CORPORATION

30 ROCKEFELLER PLAZA, NEW YORK

Ranger Aircraft Engines Division
Farmingdale, L. I.

Fairchild Aircraft Division
Hagerstown, Md. . . . Burlington, N. C.

Duramold Division
New York, N. Y.

The little girl who never was sick

You do not know this little girl. But for a thousand years she has lived as a dream in the minds and hearts of mankind . . . symbol of a time when science shall have won its long battle against disease.

Today that dream has come a long step nearer reality with the development of the General Electric electron microscope . . . a super-microscope with which man can see many things that he has never been able to see before.

After the war, General Electric and other manufacturers will produce electron microscopes in quantity. The advantages of simplicity and portability, offered for the first time in the new General Electric instrument, will make the electron microscope available to thousands, instead of to only a few.

The skill which produced the electron microscope is also represented in the General Electric radio. For the radio, too, is an electronic instrument. Radio and television receivers which General Electric will bring you after the war will be finer than ever before because of the knowledge now being gained by General Electric as a leading producer of radio for the armed forces.

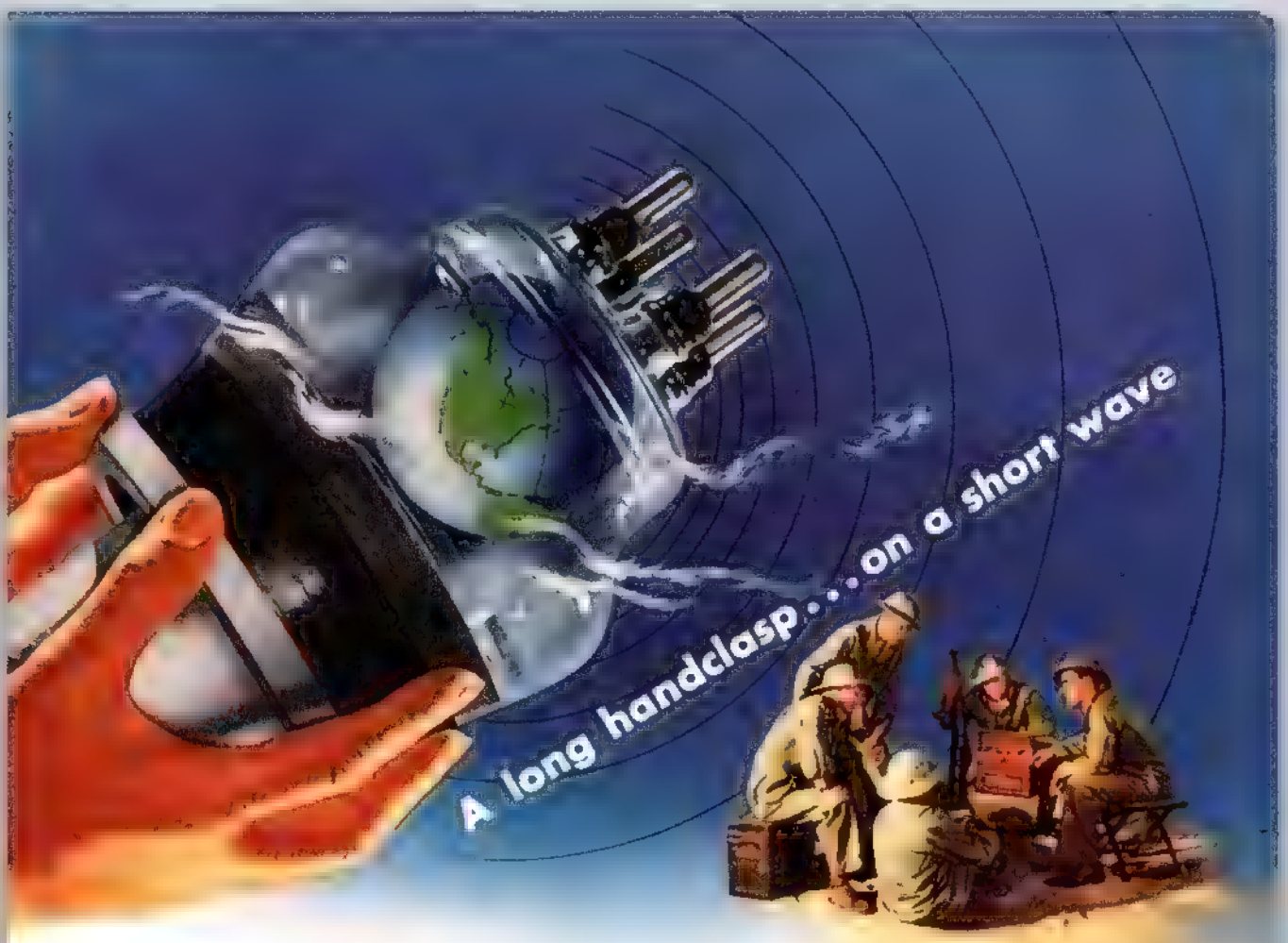
The story of electronics is told in a new 32-page book: "Electronics —a New Science for a New World." Write for your *free* copy. *Radio, Television, and Electronics Department, General Electric, Schenectady, New York.*

Listen to the General Electric Radio News Program, with Frazier Hunt, Tuesday, Thursday, Saturday evenings, over C.B.S. and American (FM) networks. See newspapers for time.

THE NEW G E ELECTRON MICROSCOPE

GENERAL ELECTRIC

RADIO · TELEVISION · ELECTRONICS



On an island in the Pacific a soldier turns a dial. Over the balmy air comes a golden song. Garden and porch and fireplace, study hall, shop, and office, all the familiar pictures of home are in the welcome voice . . . beamed to the distant war front by the magic of short wave.

General Electric short wave stations are the one link with home for many soldiers and sailors. These men are far from America. But they are not beyond the reach of KGEI, San Francisco, and WGEO and WGEA, Schenectady.

Daily, a round up of news, dance music and sports results is broadcast. To the Far East, also, General Electric stations speak in Malay, Dutch, Japanese, Burmese, Korean, Thai, and ten Filipino dialects; and to Europe, in French, Spanish, German, Italian, Swedish, and six other languages.

This handclasp from a free people is a triumph of electronics. It is the electronic tube that flings the spoken word into the sky, and the electronic tube that captures the word and gives it a voice in your radio. And the engineering excellence that creates the great General Electric transmitters is found also in the radio built by General Electric for the home.

Write for a free copy of the new 32-page book: "Electronics—a New Science for a New World." Ask for publication GED-1028. Radio, Television, and Electronics Dept., General Electric, Schenectady, New York.

Listen to the General Electric Radio News Program, with Frazier Hunt, Tuesday, Thursday, Saturday evenings, over C. B. S. and American (FM) networks. See newspapers for time of broadcast.

Leader in radio, television, and electronic research

GENERAL ELECTRIC

RADIO-TELEVISION-ELECTRONICS

MANON . . . BY ELECTRONICS

Paris in the eighteenth century. Chevalier Des Grieux and the gay young Manon, lovers met by chance. The clink of gold and soft laughter, and tragedy at the last. . . . So faithfully does the Musaphonic recreate the color and romance of the opera that you almost see the artists before you! This superb radiophonograph, a product of General Electric electronic research, is endowed with a tone of surpassing beauty. The Musaphonic is now bringing rich musical rewards to owners, though General Electric production today is for war only. Tomorrow, through advances in electronics, the Musaphonic with FM (Frequency Modulation) will be an instrument even more magnificent.

At the Metropolitan Opera: Jarmila Novotna as Manon, and Charles Kullman as Des Grieux in Massenet's "Manon," Act IV.

The Sheraton. Musaphonic prices, $300 up. Send for free book, "Electronics – a New Science for a New World." Electronics Dept., General Electric, Schenectady, N. Y. Listen to General Electric's WORLD TODAY *every night except Sun., C.B.S., and to G-E Mazda Lamp program, Sun. evening, N.B.C. G-E employees now purchase over $1,000 000 in War Bonds weekly.*

MUSAPHONIC

GENERAL ELECTRIC

179-83

Leader in radio, television, and electronic research

FM radio brings you "natural color" music

It's just the difference between a photograph and a man's best girl, in person!

Scientists will tell you that every note of music you hear is composed of a "fundamental" tone, and a series of "overtones."

For technical reasons, which needn't concern us here, conventional radio cannot reproduce all the *overtones* of a given musical instrument. As a result, something is lacking—some of the depth and purity of tone has been lost.

But a new kind of radio, known as FM, reproduces tones *and* overtones as they have never been reproduced before . . . brings you "natural color" music without static or interference of any kind!

The General Electric FM (Frequency Modulation) Radio is an *electronic* instrument, developed by G-E engineers with Major E. H. Armstrong, originator of FM.

Today, General Electric FM radio is fighting the enemy on land, on sea, and in the air. Tomorrow, it will offer you a wholly new conception of radio performance!

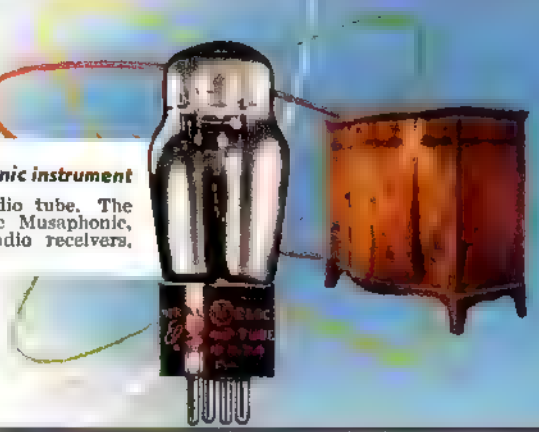
FREE: Fascinating booklet, 32 pages in full color, tells the story of FM radio, television, and other electronic wonders. Write for your free copy of "Electronics—a New Science for a New World," to Section 4-A, Electronics Dept., General Electric Company, Schenectady, N. Y.

Tune in on Frazier Hunt and the News every Tuesday, Thursday, Saturday evenings over C. B. S. On Sunday night listen to the "Hour of Charm," over N. B. C. See newspapers for time, station.

GENERAL ELECTRIC

170-24

Leader in radio, television, and electronic research



Every General Electric Radio is an electronic instrument

This is a General Electric electronic radio tube. The radio-phonograph is the General Electric Musaphonic, most distinguished of the many G-E radio receivers.

MORE POWER FOR TANKS TODAY—
CHEAPER POWER FOR AMERICA TOMORROW!

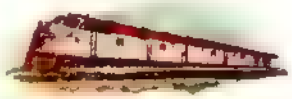
America's tanks pack a powerful push as well as a powerful punch. And more times than most people know, this push comes from a General Motors Diesel Engine.

What's more, you'll also find these rugged, hard-working power plants in landing barges, patrol vessels, military trucks, construction tractors and many other wartime jobs where sturdy dependability is required.

They burn cheaper fuel and use less of it—operate with a minimum of attention.

Of course the needs of war are taking every engine that even our expanded production can make, but when peace comes America will profit—through low-cost power for many new applications.

So while now GM Diesels are adding strength to America's fighting arm, they will be one of the important contributions to better days after victory is ours.



With each war there seems to develop a new era in transportation. And in this one there is the epoch-making General Motors Diesel Locomotive, tried, proved and providing a new pattern of transportation, keyed to the greater days ahead.

GM
GENERAL MOTORS
DIESEL POWER

ENGINES.....*15 to 250 H.P.*.....*DETROIT DIESEL ENGINE DIVISION, Detroit, Mich.*

ENGINES..*150 to 2000 H.P.*...*CLEVELAND DIESEL ENGINE DIVISION, Cleveland, Ohio*

LOCOMOTIVES.....*ELECTRO-MOTIVE DIVISION, La Grange, Ill.*

WAR JOBS WELL DONE MEAN LOWER FUTURE POWER COST

SCARCELY anything you can name fills so many different war jobs as the General Motors Diesel engine. In tanks, landing boats, patrol boats, trucks, tractors and auxiliaries—everywhere sturdy dependability is needed—they're supplying power for our fighting forces.

The result is that, though plant facilities have mushroomed and production records are broken time and time again, everything we can make is hustled off to war.

But there is this important compensation. These accelerated war demands are advancing GM Diesel production and technique years faster than could the demands of ordinary peacetime manufacture.

So we can look forward to lower-cost power and to new peacetime applications for these engines when the war is won—to broadened fields where this power will serve.

New eras of railroading follow in the footsteps of war. Another new era of railroading is assured in the wake of this war. General Motors Diesel locomotives already are establishing new standards of transportation.

GM
GENERAL MOTORS
DIESEL POWER

ENGINES.....*15 to 250 H.P.*.....DETROIT DIESEL ENGINE DIVISION, Detroit, Mich.

ENGINES..*150 to 2000 H.P.*...CLEVELAND DIESEL ENGINE DIVISION, Cleveland, Ohio

LOCOMOTIVES.....ELECTRO-MOTIVE DIVISION, La Grange, Ill.

PREVIEW OF TOMORROW'S POWER

IF you want a glimpse of how tomorrow's hard jobs will be done, look at what is doing the tough war jobs today—such jobs as building airfields in the jungle.

Look in tanks and trucks, in landing barges and patrol vessels, in tractors and auxiliaries. You'll find General Motors Diesel Engines packing them with power.

This grueling service is emphasizing the virtues of GM Diesels—highlighting their ruggedness—showing how little fuel they use, and low-cost fuel at that.

With the war won, our expanded facilities will be turned to peacetime needs, and these engines will be available for many applications where America will need dependable, economical power.

New eras of transportation follow in the footsteps of war. Another new era of transportation is assured in the wake of this war. General Motors Diesel Locomotives already are establishing new standards.

BACK THE ATTACK — WITH WAR BONDS

GM
GENERAL MOTORS
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Report from the front on SYNTHETIC TIRES

OUT in the great desert training camps — and at the front, too—the Army is putting all-synthetic tires to grueling test. The *first* tires of this type, produced from synthetics entirely manufactured in government plants erected since Pearl Harbor, were delivered by Goodyear.

How are these synthetic tires standing up under such rough usage? The answer is—surprisingly well! They have stamina, withstand abuse, give adequate mileage. In many respects they are proving comparable to prewar natural rubber tires.

And here is one more important fact you will be glad to know. Unlike German buna tires that, it is reported, cracked and split under extreme cold in Russia, Goodyear-built tires keep resilient at low temperatures. They will perform as well in Alaska as in the tropics.

This superiority is due to the intensive work in improving methods of compounding synthetics and developing tougher cord that has gone on continuously since Goodyear produced its first all-synthetic tire in 1937.

Tires for civilian cars made from synthetics like Goodyear's Chemigum are now in production. Meanwhile, further improvements and refinements have been going on apace — so when you get them you can be sure they will be the best synthetic tires money can buy.

CHEMIGUM

Chemigum (pronounced Kem-i-gum) — T M The Goodyear Tire & Rubber Company

ALL-SYNTHETIC TIRES BUILT BY GOODYEAR *1 Military type 2 Passenger type*

GOODYEAR

THE GREATEST NAME IN RUBBER

Tough? These new SYNTHETIC RUBBER soles wear twice as long as leather!

EVERY general knows that a soldier is no tougher than his feet. That is why, back before the war, both the Army and Marine Corps made rubber soles and heels "regulation" on field shoes—because tests proved good rubber long outwore any other material on the march. And it is easier on the feet than old-style hobnails.

But when Uncle Sam began calling millions of men to the colors, Goodyear foresaw that our troops might eventually be deprived of these longer-wearing, foot-cushioning soles as the nation's rubber reserve dwindled. So many months ago we set our Research Department the task of developing comparable soles and heels from Chemigum, Goodyear's own synthetic rubber.

Now after many trials Goodyear is ready with Chemigum soles and heels that not only wear as long as natural rubber—*more than twice as long as the best leather*—but possess a plus advantage not found in either rubber or leather. This is Chemigum's impermeability to acids, oils and greases that cause both leather and rubber to soften and swell. As a result, Chemigum soles and heels are definitely superior for wear in engine rooms, auto repair shops, gasoline stations, oil fields, barnyards and in many industries.

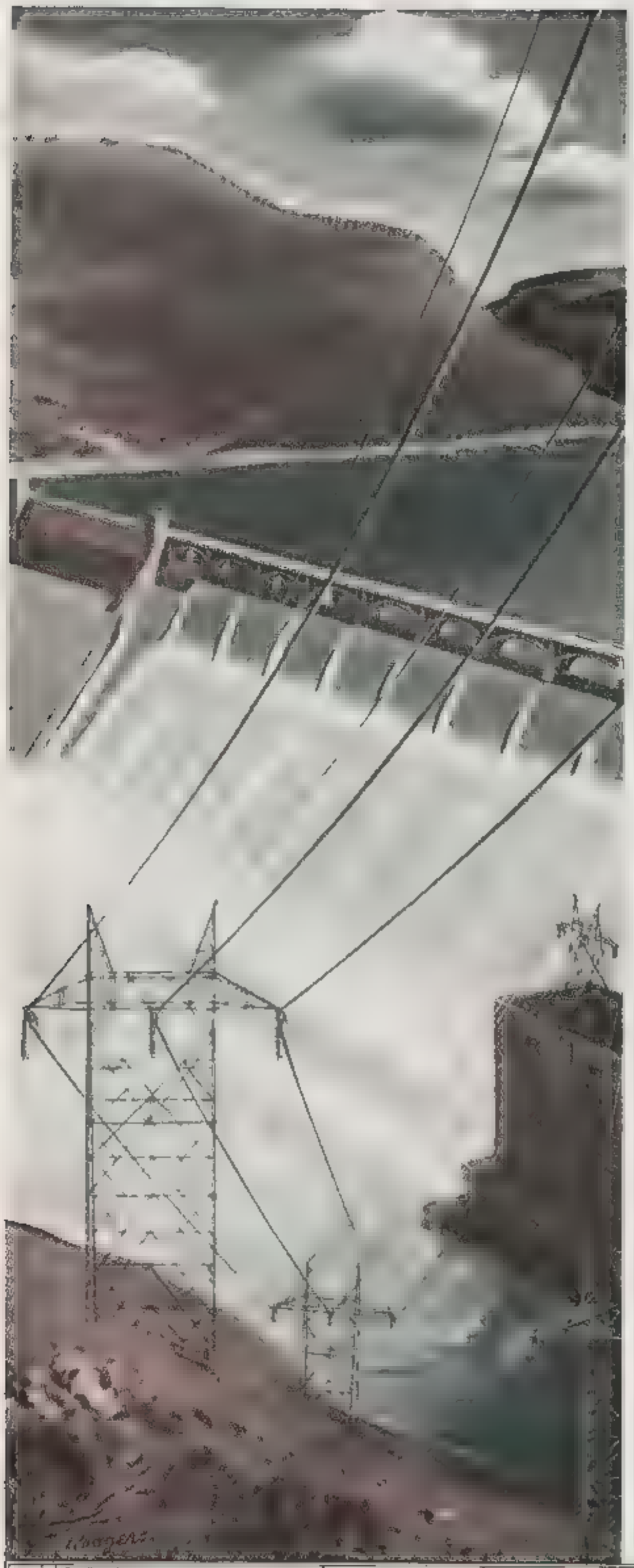
Thus once again Goodyear has anticipated an emergency and is ready with the answer. Should the rubber shortage force the Army to give up its present shoe construction, Chemigum soles and heels can be produced as rapidly as adequate quantities of this synthetic rubber can be made available. And with the expanding output of new synthetic plants, built as part of the government's rubber program, these better shoe products will ultimately be available to all.

CHEMIGUM

GOODYEAR

THE GREATEST NAME IN RUBBER

Chemigum—T. M. The Goodyear Tire & Rubber Company



Power for WAR
Power for PEACE

INDUSTRIES in the great Northwest, now supplying the United Nations' war machines, can swing swiftly to peace-time production.

After-the-war necessities for the new world will roll from these plants because power is and will be abundantly available.

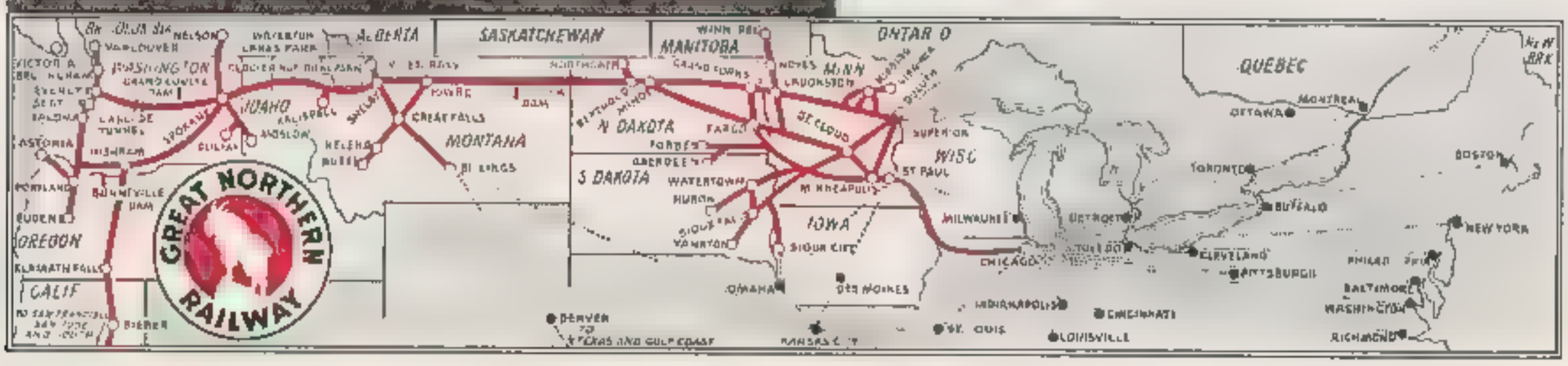
Supplementing production of electric energy by private enterprise, an increasing supply of power is being generated at public-owned dams. Great Northern Railway's transportation services were an important factor in the construction of hydroelectric plants at Grand Coulee and Bonneville on the Columbia, Fort Peck on the Missouri, and others in the vast region between the Great Lakes and the Pacific.

This is **power for war,** because it is helping America to tremendous emergency production; it is **power for peace,** too, for it is attracting important new industries to the fast-developing commonwealth served by Great Northern.

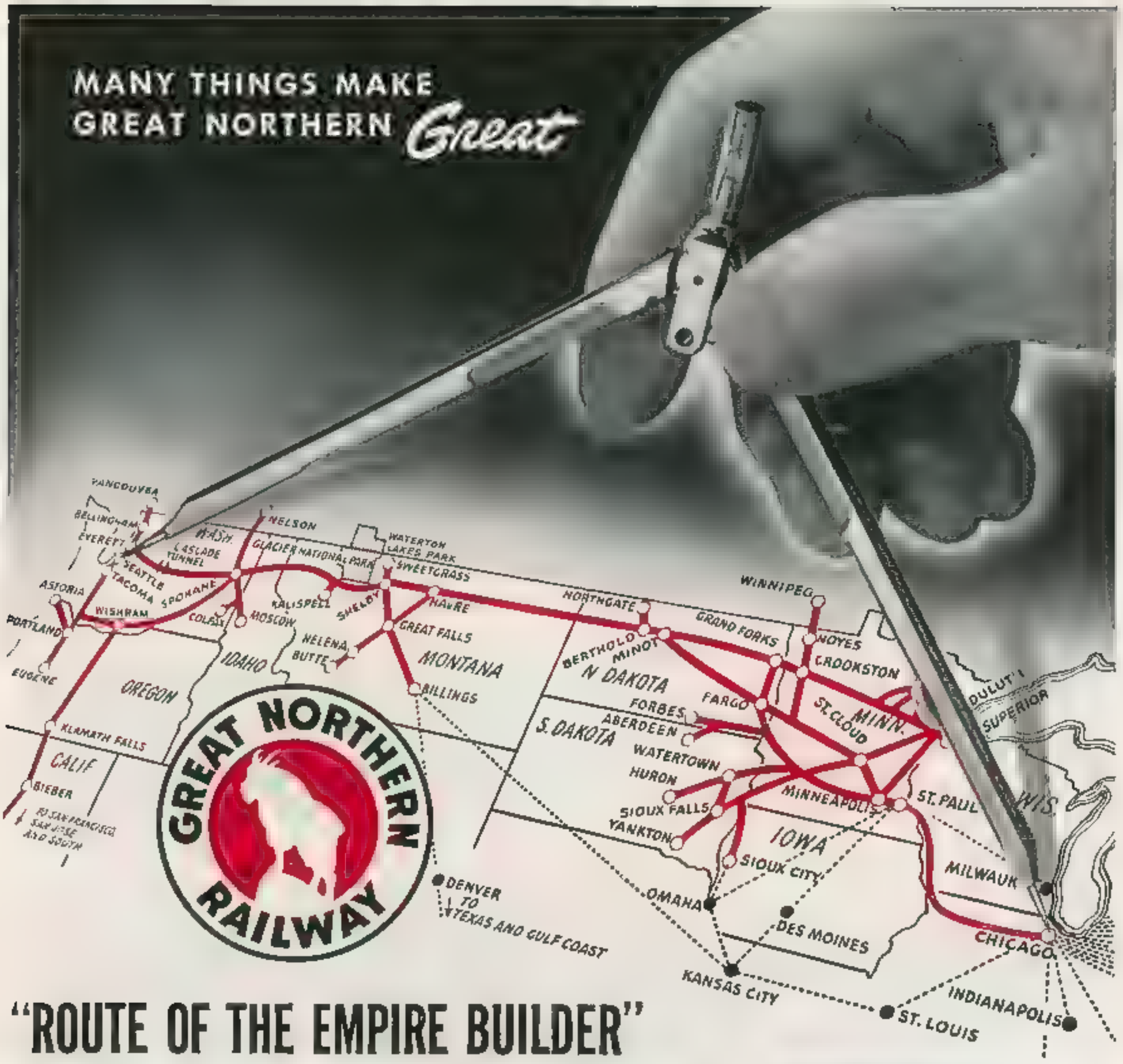
The by-products of hydroelectric power will be equally valuable—foodstuffs raised on millions of acres made productive through the magic of irrigation.

GREAT NORTHERN RAILWAY

ROUTE OF THE EMPIRE BUILDER
BETWEEN THE GREAT LAKES AND THE PACIFIC



MANY THINGS MAKE
GREAT NORTHERN *Great*



"ROUTE OF THE EMPIRE BUILDER" MEANS "DEPENDABILITY" TO SHIPPERS AND PASSENGERS

Great Northern Operating "Know How" is Big Factor in Maintaining Victory Pace

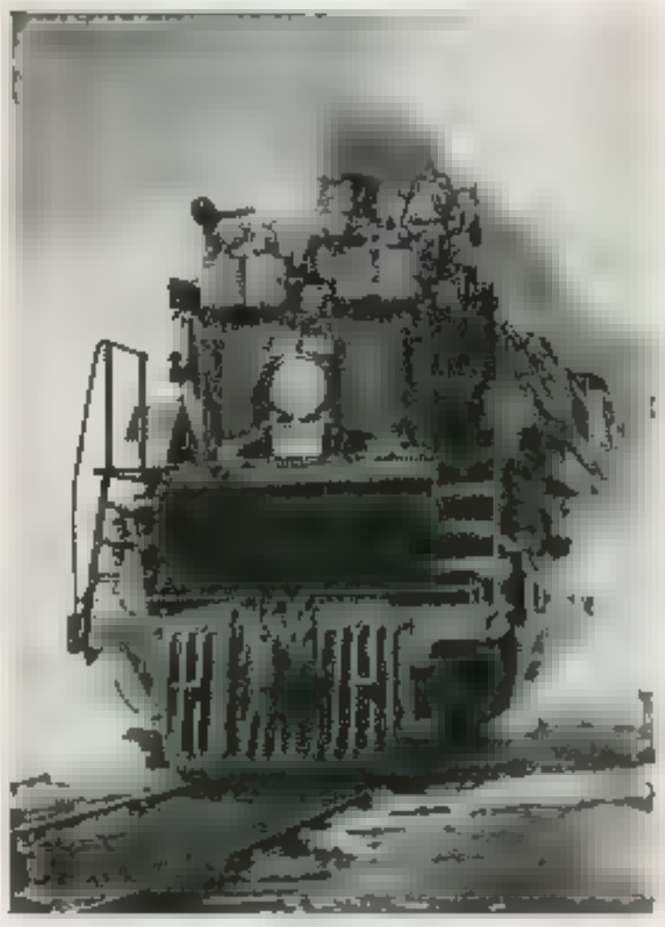
Dependable transportation by rail never has been so important as now, when armament, iron ore and steel, explosives, lumber, plywood, copper, aluminum, magnesium, and an impressive list of foodstuffs are moving from and to Great Northern territory.

Equally important is Great Northern's movement of men and supplies bound for all the theaters of World War II.

This year Great Northern will handle the greatest traffic load in its history with fewer locomotives and cars than during World War I. Its superbly-engineered route between the Great Lakes and the Pacific makes this possible.

Great Northern's short, strategic line crosses the Rocky Mountains in Montana through Marias Pass, lowest in any northern state, and the Cascades in Washington through 8-mile Cascade Tunnel, longest in the Western Hemisphere.

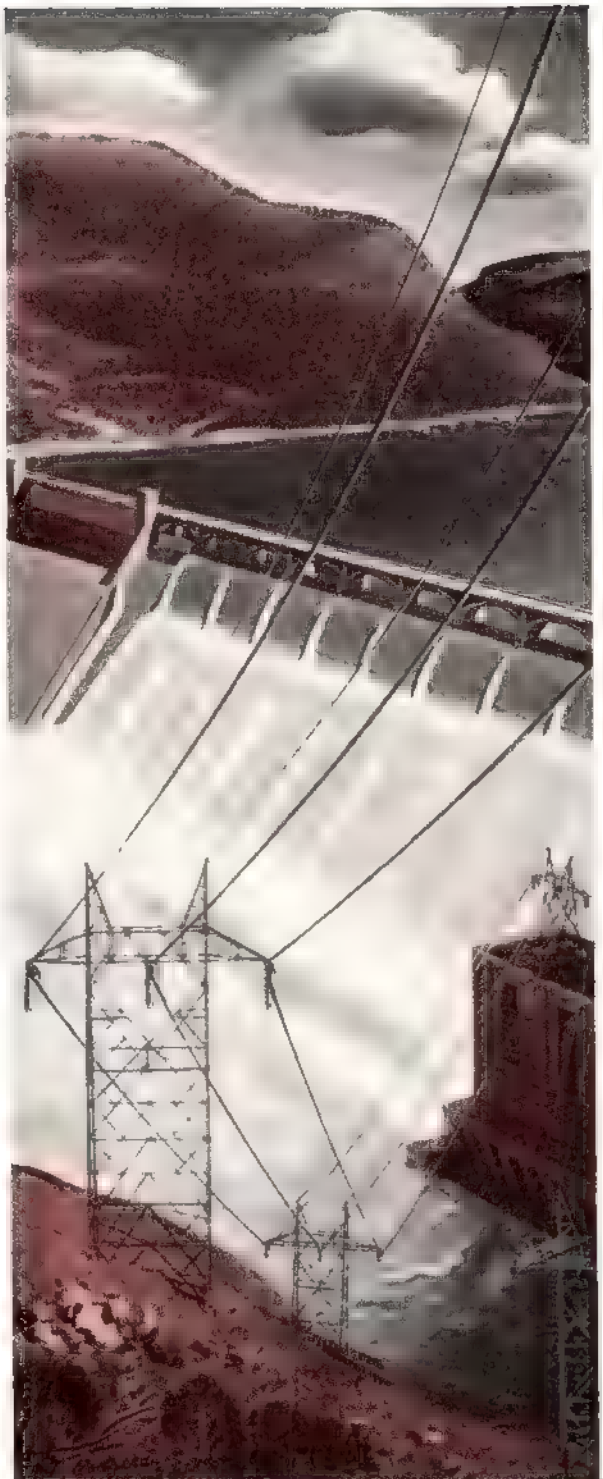
These advantages assure greater comfort for passengers and dependability of freight schedules.



Here's a mammoth G. N. locomotive roaring down the Victory trail with a trainload of war supplies. Regular passenger and freight trains, in addition to special military trains, are handled by different motive power, each designed for a specific job · diesel, electric, coal-burning and oil-burning steam locomotives.

GREAT NORTHERN RAILWAY

BETWEEN GREAT LAKES AND PACIFIC



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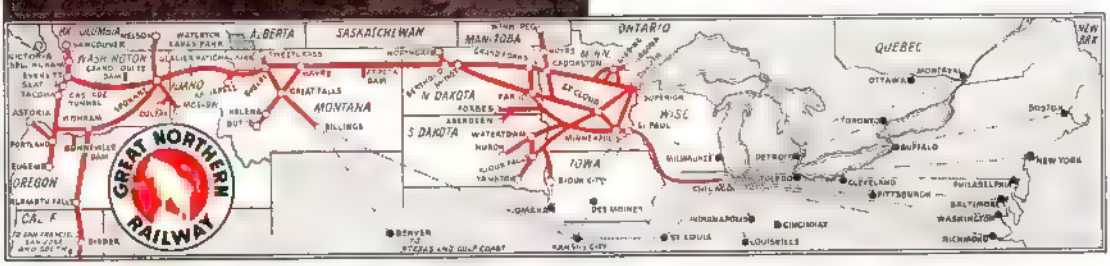


This ARMY MOVES BY GREYHOUND

. . . 132 Million Passengers in One Year . . . the Fighting, Working Manpower of America!

It will amaze many to learn that Greyhound and other bus lines now carry more than half of all *intercity* passengers between cities, towns, military centers, farm and factory areas. Buses do this immensely important job on less than 3 per cent of the motor fuel used by all commercial vehicles!

Greyhound, doing the largest single share of this war job, has seen its passengers change, almost overnight, to war plant workers, men and women in uniform, farm help—and all the others whose trips are so necessary to back our fighting men in far lands.

To provide extra space on buses for men and women in the service, Greyhound is urging civilians to take only necessary trips . . . to avoid travel on holidays and week-ends . . . to take less baggage. ***And be sure to buy more War Savings Bonds and Stamps!***

GREYHOUND

The best shot in the world would be helpless without it!

● Imagine trying to aim a huge gun at a tiny dot miles up and traveling across the sky at 300 miles an hour!

In many cases, it would be well-nigh impossible if it weren't for an electrical brain that actually makes lightning calculations and aims the gun automatically.

All the gunners do is keep two sights centered on the plane . . . one for elevation . . . the other for direction. The electric brain does the rest.

It is vitally important at all times to know the exact condition of the system that operates the electric brain . . . and that's the job of electrical indicating instruments.

Today Gruen is proud to be making precision instruments of this type for all services . . . proud to turn our 69 years' experience with *Precision* watches to this new and vital job.

Please remember this . . . when your Gruen dealer has to say, "Sorry, but we no longer have the particular model you want." The Gruen Watch Company, Time Hill, Cincinnati, Ohio, U.S.A. In Canada, Toronto, Ont.

■

AMERICA'S CHOICE SINCE 1874

BUY A GRUEN WATCH...BUT BUY A WAR BOND FIRST!

GRUEN
THE PRECISION WATCH.

GRUEN...MAKERS OF THE PRECISION WATCH...AND PRECISION INSTRUMENTS FOR WAR

"PRECISION" AND "THE PRECISION WATCH" ARE THE REGISTERED TRADE MARKS OF THE GRUEN WATCH COMPANY. COPYRIGHT 1943, THE GRUEN WATCH COMPANY

In 24 months.. OIL-lubricated driving-journals ..on these 12 fast freight locomotives -

saved enough in lubricant alone to pay the cost of the driving-journal lubricators —

saved enough in crown brasses to pay double the cost of all the lubricators

In 24 months of service with Hennessy OIL lubricators in the driving, tender, and trailer journals, these 12 fast-freight locomotives rolled up one million miles of severe service. In those 2 years--not a single heating occurred. Not a single crown bearing was renewed. Not a single journal was turned. And crown brasses still show no appreciable wear.

Savings in lubricant and replacement brasses have already paid for Hennessy lubricators--three times over. To say nothing of the labor saving, or the increased availability and ton-mileage of the locomotives. 4600 Hennessy Mechanical Driving-Journal Lubricators now in use. Hennessy Lubricator Co., 75 West St., N. Y.

HENNESSY LUBRICATOR

MECHANICAL **OIL** LUBRICATION **FOR ALL** RAILWAY JOURNALS

See advertisements in Railway Mechanical Engineer of October, November, 1942, March and April, 1943 for typical applications

IT is not at all unusual for wear-resisting parts made from HUNT-SPILLER *Air Furnace* GUN IRON to stay with the locomotive through several classified repairs before renewals are necessary.

Performance records show unusual mileage between replacements—increased locomotive availability—economical fuel consumption and lower maintenance costs.

Complete installations of the H.S.G.I. parts listed below insure maximum economies and dependable locomotive performance.

HSGI
Reg. U. S. Trade Mark
Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings

Finished Parts
Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above
Sectional Packing)
Cylinder Snap Rings
Valve Rings, All Shapes
Light Weight Valves
Cylinder Liners and Pistons
for Diesel Service

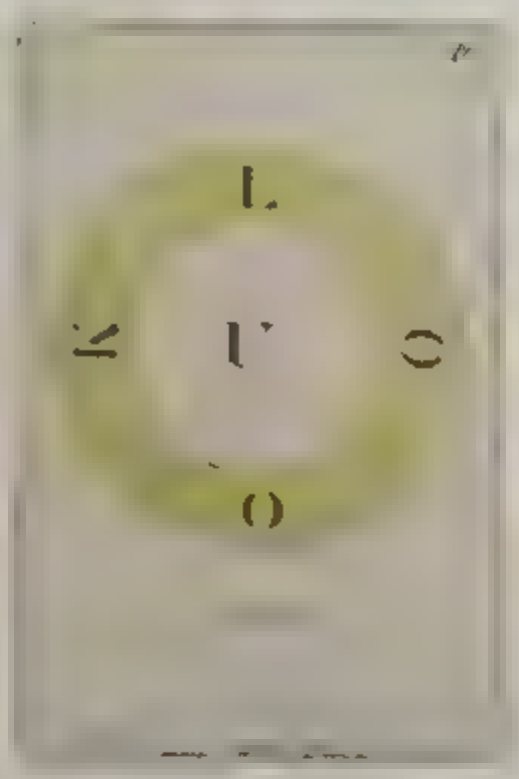
HUNT SPILLER MFG. CORPORATION
V. W. Ellet, *President* **E. J. Fuller, *Vice-Pres. & Gen. Mgr.***

Office & Works
383 Dorchester Ave. **South Boston 27, Mass.**

Canadian Representative: Joseph Robb & Co. Ltd., 5575 Cote St. Paul Rd., Montreal P. Q.
Export Agent for Latin America
International Rwy. Supply Co., 30 Church Street New York, N. Y.

HUNT-SPILLER GUN IRON
Air Furnace

HOW MUCH IN THE POUND



LOOK AROUND YOU

THE QUEEN OF SHEBA

A HEELBITER OR BACKBITER

SEVENOAKS

HATTON GARDEN

CATASTROPHE

BLACKFRIARS

PICTORIAL PUZZLES WITH PUNNING SOLUTIONS WALLISS 18th CENTURY PLAYING CARDS

IN ALL BATTLE AREAS ARE FOUND
BOMBER PILOTS *trained*

With
JACOBS AIRCRAFT *Engines*

The majority of twin-engine Training Planes in the United States and Canada are powered by JACOBS.

JACOBS AIRCRAFT ENGINE CO.
POTTSTOWN, PENNSYLVANIA, U. S. A.

JACOBS AIRCRAFT engines

This shadow is becoming a familiar one over Nazi-held Europe, and will become increasingly familiar.

The devastating accuracy that accompanies this shadow was born and developed on American Training Fields, where the Army Air Forces Training Command taught the pilots and crews to concentrate on the accomplishment of their mission with *precision*.

Complete reliability of Training Plane engines is essential for such concentration.

The majority of the twin-engined Training Planes, in which the Bomber Pilots are schooled, are powered by Jacobs. This reliable power enables them to concentrate completely on the precise bombing technique, without a thought to their engines. This same reliable power will also allow thousands of Americans to carry their families and friends through the air with complete security after Victory is won.

JACOBS AIRCRAFT ENGINE CO.

POTTSTOWN • PENNSYLVANIA • U·S·A

SUBMARINE BELOW---

FLASHES THE CIVIL AIR PATROL PLANE

The indistinct shadow beneath the water means little to the untrained eye—but, the C.A.P. Pilot and his Observer instantly recognize the outline of a lurking enemy submarine preparing for destruction and death. The Pilot's depth charge is soon on its way—the location radioed to the Army, Navy and Coast Guard. The destruction of the raider is imminent.

Former commercial and pleasure fliers who volunteered their services and their airplanes, the men of the Civil Air Patrol have been risking their lives daily since Pearl Harbor in the grim, relentless search for Axis submarines off our shores. Many ships have been saved from torpedoing—many already-shipwrecked seamen rescued—thanks to their ceaseless patrol. To them belongs no small share of the credit for driving the enemy undersea raiders away from our coasts.

We salute them for the courage, ability and self-sacrifice with which they do their job—and we are proud that many of the planes in which they perform this service to the Nation are Jacobs-powered.

JACOBS AIRCRAFT Engines

POTTSTOWN, PENNSYLVANIA, U. S. A.

A standout gift for men in the Service

Reproduction of a Kodacolor snapshot, reduced in size.

FULL-COLOR SNAPSHOTS

with your Brownie or Kodak

WHAT you've wanted for years! . . . full-color snapshots . . . on the new Kodacolor Film. It's going to revolutionize your snapshooting possibilities.

With Kodacolor Film you can now take color snapshots in good sunlight with your Kodak or Brownie—and from the negatives the Kodak Company makes Kodacolor Prints—full-color snapshot prints on paper.

Kodacolor Film is precious today, but there's a modest amount still available for you. Save it to use on important occasions.

All Kodacolor Film is processed at Kodak's laboratories. Ask your Kodak dealer to give you details.

Kodak Minicolor Prints . . . Have beautiful full-color photographic enlargements made from your 35-mm. or Bantam Kodachrome transparencies. In three sizes—2 X (about 2¼ x 3¼ in.), 5 X (about 5 x 7½ in.), and 8 X (about 8 x 11 in.).

Home Movies with Kodachrome Film . . . If you are unable to get full-color Kodachrome Film, in either 8-mm. or 16-mm. sizes, you will realize, of course, that it is because our armed forces need so much . . . Eastman Kodak Co., Rochester, N. Y.

Kodak Research has made Color Photography a part of everyone's life

Kodak Minicolor Print, actual size

Reunion at Christmas

HIS BEST GIRL smiles her sweetest smile . . . while little sister (who's not so little any more) makes sure Bruce sits nicely for his picture . . . they've come, all three, to gladden a soldier's heart, at Christmas.

If yours is a miniature camera, you can send your man in the service Kodak Minicolor Prints . . . beautiful, full-color enlargements made from your miniature Kodachrome transparencies. (Above, is the small size; there are also larger sizes, ideal for framing.)

Or, if you use a standard size roll-film camera, you can send him Kodacolor Prints, the full-color prints you get of the snapshots you take with Kodacolor Film. Ask your Kodak dealer for details, and be sure to see his pocket cases and easel mounts for "dressing up" your color prints.

* * *

The Christmas card that's all your own is the photo greeting kind. Take a favorite black-and-white negative to your Kodak dealer and he'll do the rest . . . Eastman Kodak Company, Rochester, N. Y.

Time is short. See your Kodak dealer now

Reproduction of a Kodacolor snapshot, much reduced in size.

A standout gift for men in the Service

FULL-COLOR SNAPSHOTS

with your Brownie or Kodak

REVOLUTIONARY! . . . full-color snapshots on the new Kodacolor Film. They're the biggest news in photography since roll film was introduced.

With Kodacolor Film you can now take color snapshots in good sunlight with any Kodak or Brownie—and from the negatives the Kodak Company makes Kodacolor Prints —full-color snapshots printed on paper.

At present the supply of Kodacolor Film is limited—but there's a modest amount available. Use it for important occasions.

All Kodacolor Film is processed at Kodak's laboratories. Ask your Kodak dealer to give you details.

Kodak Minicolor Prints . . . Have beautiful full-color photographic enlargements made from your 35-mm. or Bantam Kodachrome transparencies. In three sizes—2 X (about 2¼ x 3¼ in.), 5 X (about 5 x 7½ in.), and 8 X (about 8 x 11 in.).

Home Movies with Kodachrome Film . . . There's still a fair amount of full-color Kodachrome Film on hand, for 8-mm. and 16-mm. Cine-Kodaks. Use it for the high spots . . . Eastman Kodak Company, Rochester, N. Y.

Kodak Research has made Color Photography a part of everyone's life

A standout gift for men in the Service

Reproduction of a Kodacolor snapshot, reduced in size.

FULL-COLOR SNAPSHOTS

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Kodak Research has made Color Photography a part of everyone's life

. . . and we made a Sapphire!

YOU'RE LOOKING at a sapphire being made in the incandescent heat of a specially designed furnace . . . a synthetic sapphire . . . better than the natural gem. It takes hours to grow one of these sapphire boules.

What's so wonderful about it? Sapphire is necessary for the security of this country. Out of this jewel stone are made hard, long-wearing bearings for precision instruments. The various precision devices of a modern battleship require more than 4,000 jewels; about 100 more are needed in fire-control mechanisms. Modern pursuit planes and bombers require up to 100 sapphire bearings in their instruments.

In 1940, this country was completely dependent upon Europe for sapphire jewels. The call went out for American-made sapphire to meet this nation's needs.

Because we at Linde are experienced in the production of gases and in the accurate control of high temperature gas flames, we volunteered to try to make sapphire. After two years of experimental research, we learned how to produce the high-purity raw materials needed and also how to make sapphire from those materials. Today, we make more synthetic sapphire than this country ever imported from Europe . . . enough to meet all industrial and military needs. Thus America need never again be dependent upon an outside source.

Right now, we make colorless sapphire because colorless jewels make harder bearings. No sapphire is available for anything but war production. In the future we stand ready to make ruby and other gem stone materials for the jewelry trade . . . and for you.

This research development by The Linde Air Products Company is paralleled by other recent achievements of Electro Metallurgical Company, Carbide and Carbon Chemicals Corporation, and National Carbon Company, Inc.—all of which are Units of Union Carbide and Carbon Corporation.

THE LINDE AIR PRODUCTS COMPANY

Unit of Union Carbide and Carbon Corporation

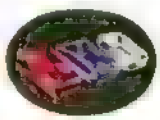
GENERAL OFFICES: NEW YORK, N. Y.

Offices in Principal Cities

HIS BEARINGS ARE RIGHT—Chronometers, compasses, and other navigational aids must be rugged as well as precise. Sapphire bearings can "take it."

FLYING JEWELS—Lives and the success of their missions depend upon accurate instruments. Sapphire bearings assure accuracy.

LABORATORY WARRIORS—Delicate balances, time instruments, and other important precision equipment of the research worker need sapphire jewels, too.



YOURS IN THE FUTURE—Flawless gems . . . such as rubies, sapphires, and spinel . . . made by this same Linde process . . . will be available for jewelry in the future.

BUY UNITED STATES WAR BONDS AND STAMPS

FLAMES THAT CUT TIME!

TODAY, ships are needed as never before. And today, ships are being built as never before... and built faster, stronger, and with less steel... thanks to welding!

But before welding can take place, steel plates have to have their edges beveled and squared-up so that, when butted together, they look like this: or like this:

In the past, preparing plates in this manner was done by heavy machine tools. Cutting was slow and costly. Each plate had to be handled many times. Plate cutting on this basis could hardly keep pace with welding today.

Now, oxy-acetylene flames... *cutting in different planes simultaneously*... prepare the edges of steel plates of any commercial thickness *at one pass*...in a fraction of the time required by mechanical methods!

This Linde flame-planing method is as simple as ABC. It is economical...and easy to use. It cuts plates so smoothly and accurately that *no machining is necessary!* And it uses materials which can be produced in abundance.

On-the-job power requirements for flame-shaping are negligible... for the reaction of the cutting oxygen jet with the hot steel does all the work... and only fractional horsepower is required to move the cutting nozzles along the line of cut.

In conjunction with "Unionmelt" Welding... an amazing electrical welding process that unites plates of any commercial thickness faster than any similarly applicable method... like this ...the Linde method of plate-edge preparation is working miracles in speeding up shipbuilding.

These two methods are also helping to break production records in other fields. Great pressure vessels... locomotive boilers... huge pipes... heavy chemical tanks... combat tanks... artillery mounts... and other vital equipment are being turned out faster because of them.

Linde research, intensified today, is constantly solving new problems in flame-cutting, flame-fabricating, and flame-conditioning of metals for war production.

The important developments in flame-cutting—and other processes and methods used in the production, fabrication and treating of metals—which have been made by The Linde Air Products Company were facilitated by collaboration with Union Carbide and Carbon Research Laboratories, Inc., and by the metallurgical experience of Electro Metallurgical Company and Haynes Stellite Company—all Units of Union Carbide and Carbon Corporation.

THE LINDE AIR PRODUCTS COMPANY

Unit of Union Carbide and Carbon Corporation

General Offices: New York, N. Y. Offices in Principal Cities

Introducing the Navy's first land-based bomber

1. PV-1—That's the U. S. Navy's name for the Vega Ventura. It's a nautical version of the smashing new twin-engine bomber that is making a flaming Hell out of German industrial centers in almost daily R. A. F. raids. These deep-bellied Navy PV-1's strike at sea. They swoop in low from the sky with torpedoes for marauding surface craft or "ash can" depth charges for sub-busting.

2. Operating from land bases, the PV-1 is the first Navy bomber of its type to tackle the job of clearing Allied shipping lanes so that precious supplies may go through. Airfields on small island outposts are big enough for PV-1's, and droppable fuel tanks give the planes effective range to blast the enemy. Military experts say it may be the answer to the United Nations' No. 1 war problem—licking the enemy's submarine wolf packs.

3. Like the Ventura it is versatile—capable of many jobs. Designed primarily for bombing, its 4000 h.p. also can be useful for towing targets for fighter plane practice, or for hauling troop-laden gliders.

4. Bigger, faster, and able to carry a larger load than the Lockheed Hudson, which they closely resemble, the PV-1 and the Vega Ventura retain the same qualities of dependability. Single spar wing construction, 100% X-Ray of all stress parts and ruggedness of design are the qualities of stamina that permit these planes to go through so much—yet bring the crews home safely.

A subsidiary of Lockheed

Vega

Aircraft Corporation

Copr. 1943, Lockheed Aircraft Corporation, Vega Aircraft Corporation, Burbank, Calif. Member Aircraft War Production Council, Inc.

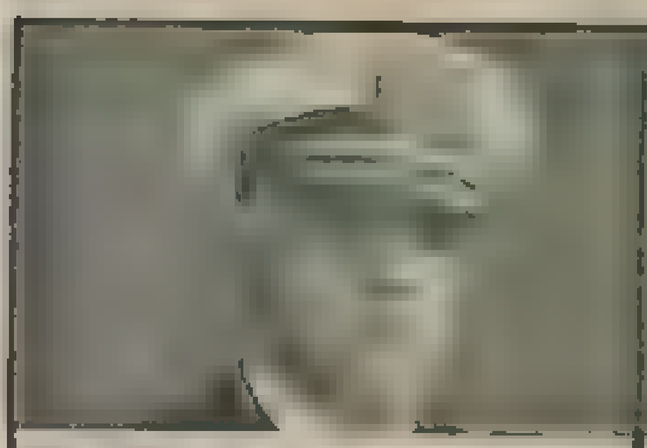
What's the word you think most of at Christmas ?

Give War Bonds for Christmas

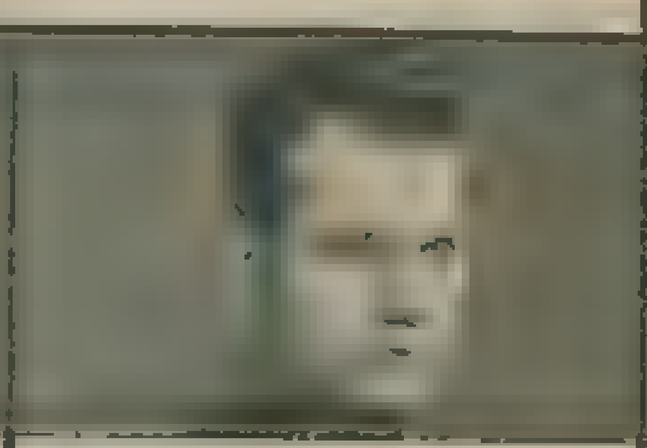
ROBERT McBRIDE & CO
Publishers of TRUTH

To be read before the 4TH War Loan Drive

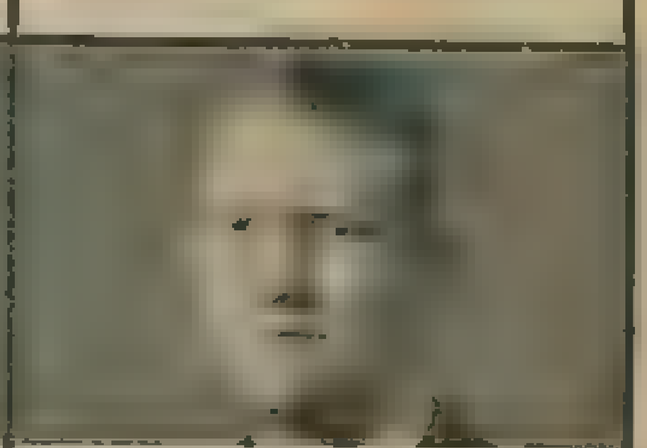
Lieutenant William G Farrow



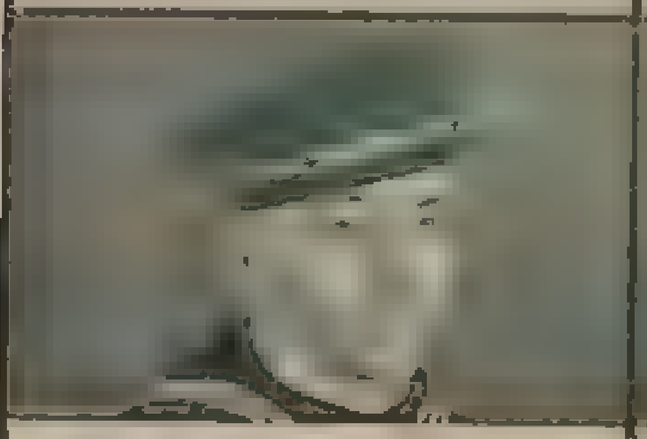
Petty Officer Daniel J Callaghan



Lieutenant George H Cannon

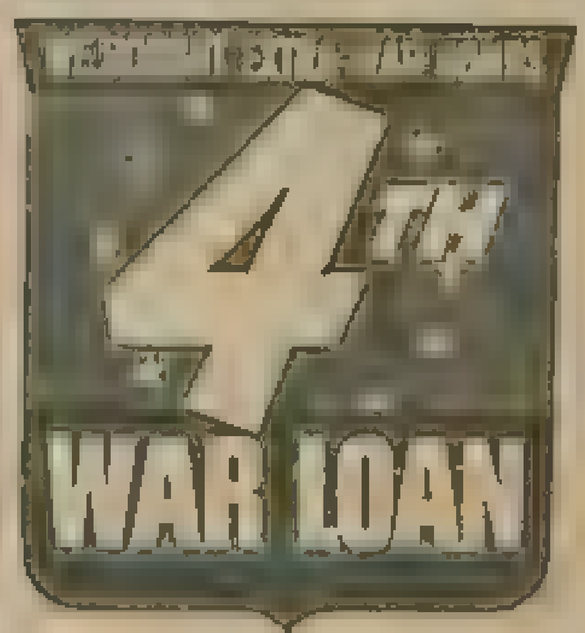


Lieutenant Alexander Nininger



Seaman first class James R Ward

Captain Albert P Rooks



Keep backing the attack!

TRAVEL
Published by R. M. McBride & Company

Letter to a P.O.W.

W[illegible] YOU WRIT[illegible] tonight?

P[illegible]rhaps h[illegible] B[illegible] P[illegible]
[illegible]ps he had to bail out over German A[illegible]
[illegible] A[illegible] [illegible]esn't had a lett[illegible]
[illegible]

And when y[illegible] [illegible]
[illegible]idn't l[illegible]ar si[illegible] W[illegible]
[illegible]—if yo[illegible] didn't

I[illegible] might[illegible] the old topcoat
[illegible], h[illegible] of threadbare so I[illegible]

No cross it out Joe might not understand about the topcoat especially if he's shivering in a damp Japanese cell

Let[illegible] try again. "Dear Joe, I'v[illegible]
pretty hard and haven't h[illegible]

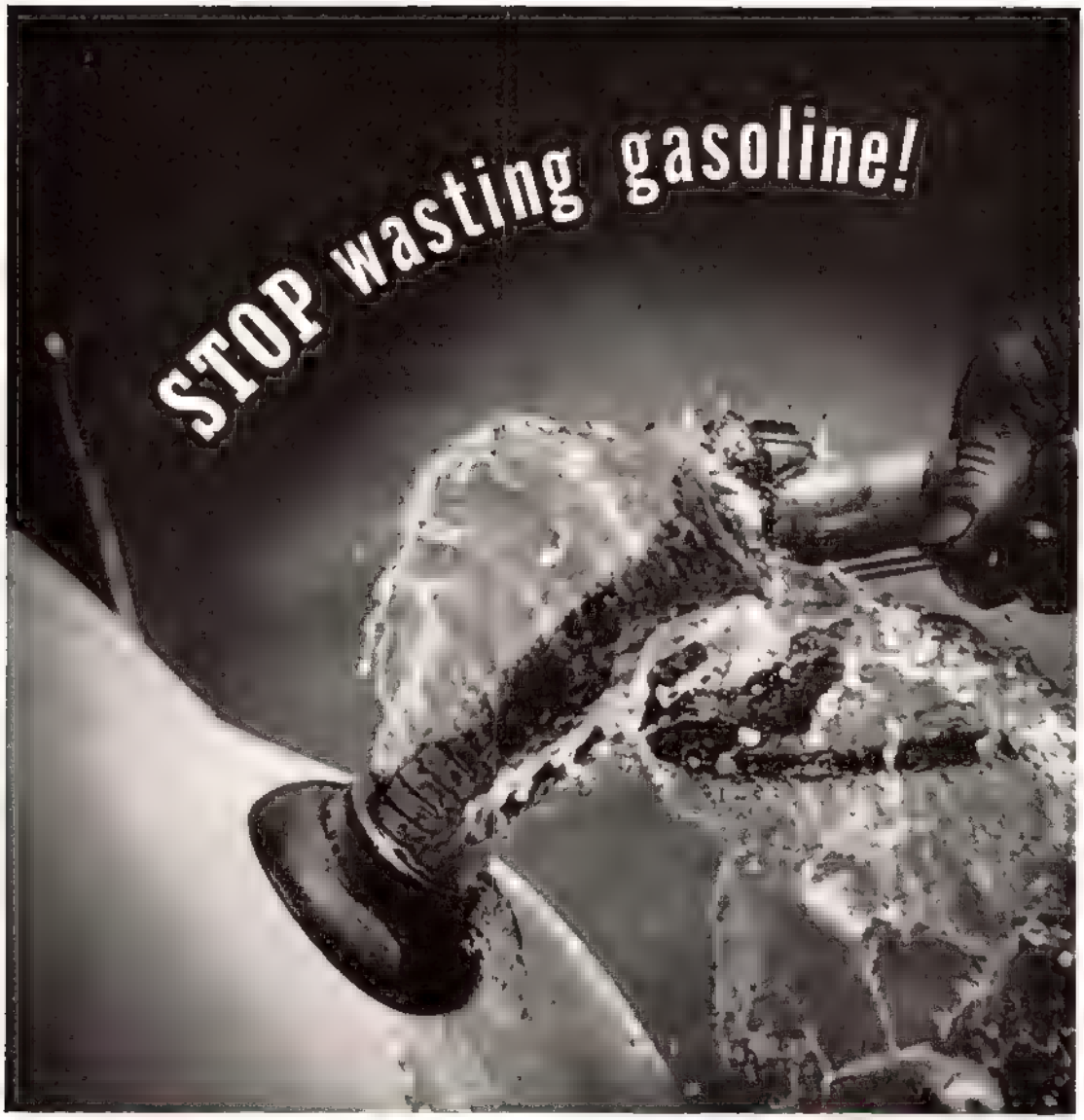
Better cross that out [illegible] T[illegible]
[illegible] Joe I[illegible]s

W[illegible] G[illegible]
[illegible]tter to Jo[illegible] To[illegible]

But muster, or madam or miss, if
you can't finish that letter, w[illegible]
[illegible]o this for Joe? Will you up t[illegible]
you're putting into your P[illegible] S[illegible] P[illegible]
so that you'll be buying your share of War Bon[illegible]
from here on in? And will you—for Joe's sake—
start doing it right away?

ROBERT M. McBRIDE & CO.
Publishers of TRAVEL

[illegible]ement prepared under the [illegible] War Advertising Council and the U. S. Treasury Department



RING-FREE Motor Oil saves gasoline 2 ways

Carbon on pistons, rings, valves decreases motor efficiency—leads to loss of power—wastes gasoline. Macmillan RING-FREE Motor Oil *removes carbon* while you drive! That means better motor operation and substantial gasoline savings.

The 2nd thing RING-FREE does to save gasoline is *reduce friction fast!* Reducing motor friction releases more power to your car's rear wheels, and that really cuts gasoline waste.

Here's proof: In scores of certified road tests, with various makes of owner-driven cars, an average gasoline saving of 1.3 miles per gallon was reported after crankcases had been drained and refilled with RING-FREE Motor Oil.

Let Macmillan RING-FREE help *you* save gasoline two ways. Let it make your car last longer, too, by removing carbon, reducing friction and giving more thorough motor lubrication.

SOLD BY INDEPENDENT DEALERS

MACMILLAN PETROLEUM CORP.
50 W. 50th, New York 624 S. Michigan Av., Chicago, 530 W. 6th, Los Angeles

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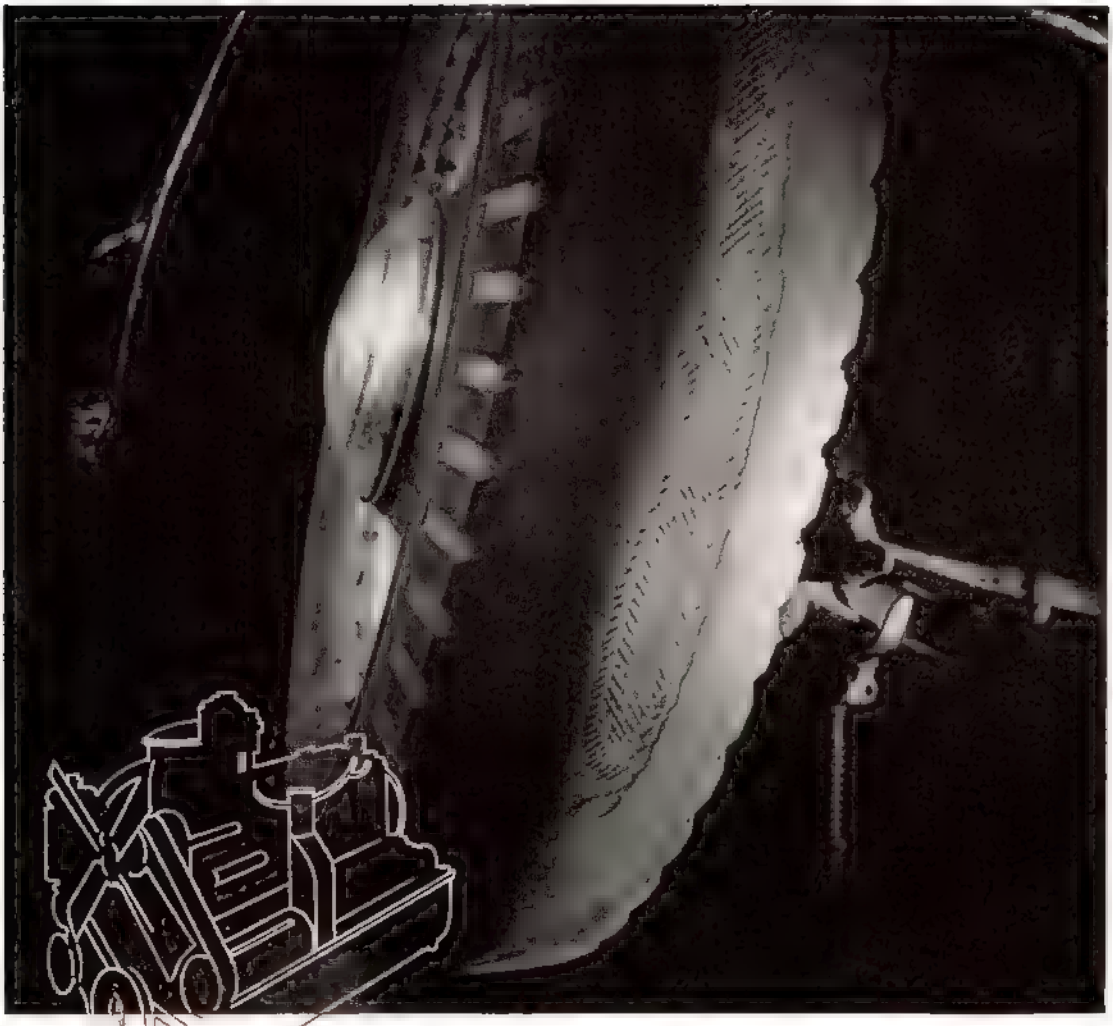


You Can't "Re-cap" a Worn Motor!

It's easy to see what friction does to your tires—but what about your motor? Friction is hard at work every second the motor runs. It not only wears out hard-to-replace metal parts, but motor friction wastes gasoline, too! That's why you should start using Macmillan RING-FREE Motor Oil at once. RING-FREE measurably reduces friction! In scores of road tests with various makes of owner driven cars, the average gasoline saving was 1.3 miles per gallon after crankcases had been drained and refilled with Macmillan RING-FREE Motor Oil. There's real, *measured* proof of friction reduction! Start using RING-FREE—keep on using RING-FREE to *save gasoline* and to lengthen motor life.

Removes Carbon *while you drive!*

If your valves, pistons and rings are suffering from carbon accumulations, try RING-FREE. You'll get a cleaner, more thoroughly lubricated, better running motor. By continued use of RING-FREE you fight carbon all the time — cut repair bills, save gasoline.

MACMILLAN PETROLEUM CORP.

50 W. 50th, New York • 624 S. Michigan Ave., Chicago • 530 W. 6th, Los Angeles

Copyright 1943, Macmillan Petroleum Corp

BUY RING-FREE WHERE YOU SEE THIS SIGN

Friction's *tough* on motors, too!

RING-FREE REDUCES MOTOR FRICTION
...REMOVES CARBON WHILE YOU DRIVE

Macmillan RING-FREE Motor Oil does a great job of motor lubrication. Here's why: (1) RING-FREE reduces motor friction, *fast;* (2) RING-FREE actually removes motor carbon; (3) RING-FREE saves gasoline; (4) it has great film strength; (5) high heat resistance; (6) long cling to metal and (7) fast penetration. (8) RING-FREE is non-corrosive and (9) is less affected by dilution...an important factor in today's slow, low motor temperature operation.

If you've never used Macmillan RING-FREE, try it now! You'll *notice* the difference—*notice* it in a smoother, better operating motor—*notice* it in a measurable gasoline saving. Start getting the full benefits of RING-FREE Motor Oil today.

Macmillan Petroleum Corp.

50 W. 50th St., New York • 624 S. Michigan Ave., Chicago • 530 W. 6th St., Los Angeles

Copyright 1943 Macmillan Petroleum Corp.

Arturo Toscanini . . . *Another portrait for the Magnavox series of famous musicians painted by Boris Chaliapin*

Born to the baton . . .

His father fought in Garibaldi's army of liberation. From this soldier of freedom, Arturo Toscanini must have inherited his uncompromising integrity . . . his readiness to fight for the higher standards of life, musical performance and appreciation that has characterized his career.

To such a man, the flattery of public applause is never important. He believes that orchestra and conductor should be hidden from view and that there should be no encores. You attain this ideal when you listen to a Toscanini broadcast or recording played by a Magnavox radio-phonograph.

This unique instrument captures all the intensity, all the subtle shades of beauty, that masterly conducting reveals in great music. It is not a matter of chance that so many famous musicians of our time have chosen the Magnavox for their own homes.

* * *

The Magnavox Company is now concentrating entirely on the production of electronic and communication equipment and music distribution systems for warships. Letters from fighting men tell of the priceless hours of pleasure that music has brought to them. See your Magnavox dealer for a wide selection of records to send to *your* soldier or sailor.

BUY WAR BONDS TODAY FOR VICTORY AND SECURITY

The fine craftsmanship which won for Magnavox the first Navy "E" award (and White Star Renewal Citation) among instrument manufacturers has made these radio-phonographs the first choice of discriminating buyers.

The Magnavox Co., Fort Wayne, Ind

Magnavox

THE GREAT VOICE OF RADIO

Eugene Ormandy — *Another painting by Boris Chaliapin in the Magnavox series of great contemporary musicians*

Music was in his blood . . .

AT the age of three he learned to play the violin . . . at seven, he was admitted to a class in counterpoint . . . at seventeen he became a professor of music.

Today, the dynamic baton of Eugene Ormandy guides one of the most celebrated groups of musicians ever assembled. Although still a comparatively young man, he is the Conductor and Music Director of the world-renowned Philadelphia Orchestra.

The audiences of this famous orchestra are not limited to the few who can purchase tickets. Superb Ormandy recordings have brought to millions the rare delight of great music greatly interpreted.

To appreciate the true quality of these Ormandy records, you should hear them reproduced with life-like fidelity by a Magnavox radio-phonograph. Because of its superb tonal qualities and unmatched clarity, this unique instrument has been chosen by discerning music lovers and many of the world's greatest makers of music.

Music Cheers Fighting Men

Our boys in the Army and Navy *need* music. It can give them endless hours of relaxation and pleasure—can help them forget hardships and dangers. See your Magnavox dealer for a wide selection of records to send to *your* soldier or sailor.

BUY WAR BONDS FOR VICTORY TODAY—SECURITY TOMORROW

The fine craftsmanship which won for Magnavox the first Navy "E" award (and White Star Renewal Citation) among instrument manufacturers has made these radio-phonographs the first choice of discriminating buyers

The Magnavox Co., Fort Wayne, Ind.

Magnavox

THE OLDEST NAME IN RADIO

Sergei Rachmaninoff

This informal portrait of the celebrated pianist composer by Boris Chaliapin, son of the famous basso, is part of the Magnavox series of great contemporary musicians.

This great Russian-born pianist-composer confesses that he began as a "lazy and mischievous boy" who shirked his practicing. Under a great teacher, the young Rachmaninoff worked to such advantage that at nineteen he composed his first opera, "Aleko".

During the Russian revolution, Sergei Rachmaninoff escaped to America to become one of this country's most distinguished citizens. He has contributed to the world's storehouse of great music for half a century, and today is at the peak of his achievement and popularity.

Like all musicians, Rachmaninoff has always received his greatest relaxation from music.

For his own home, he has chosen a Magnavox radio-phonograph. For in Magnavox, he finds an incomparable clarity and trueness of tone which alone can do justice to the great music of the world.

Music Goes to War. For men in the armed forces music is relaxation — comfort — and a tie to home. See your Magnavox dealer for a wide selection of records to send to YOUR soldier or sailor.

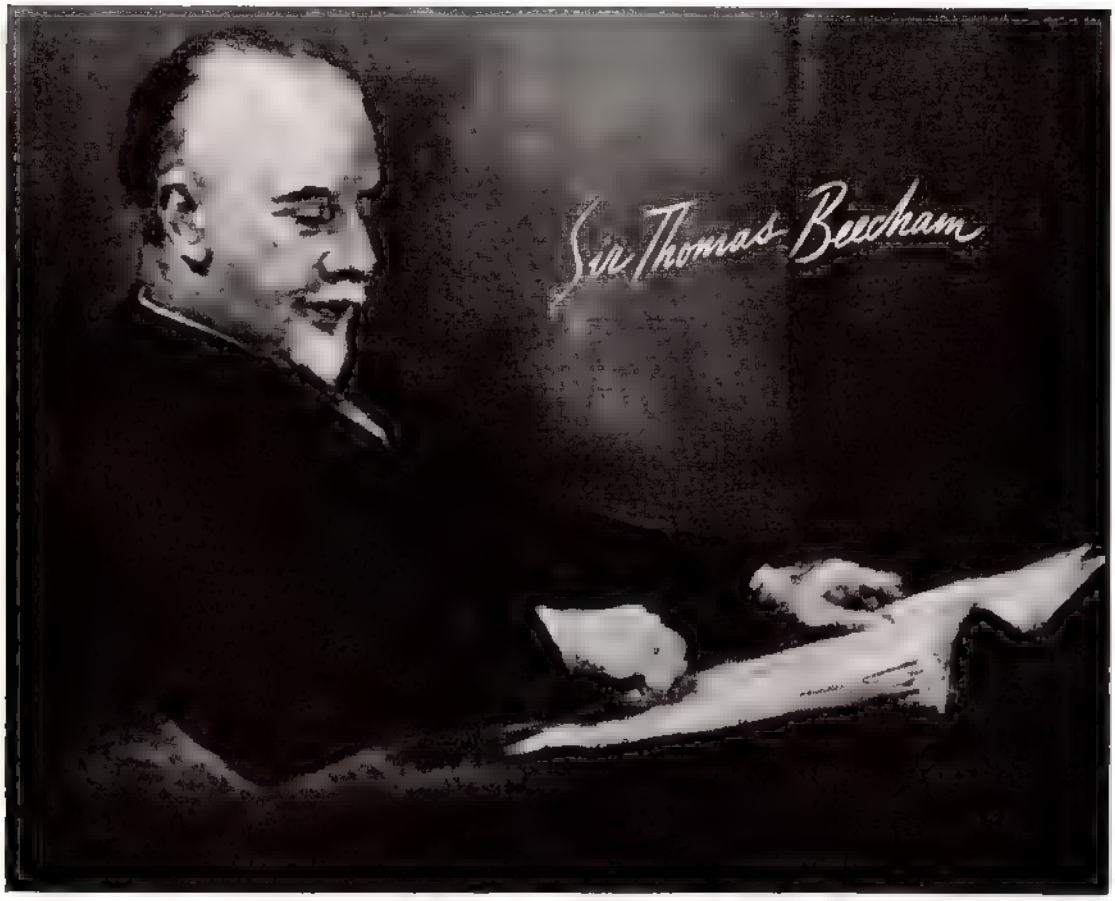
The fine craftsmanship which won for Magnavox the first Navy "E" award (and White Star Renewal Citation) among instrument manufacturers has made these radio-phonographs the first choice of discriminating buyers.

The Magnavox Company, Fort Wayne, Indiana

The War Bonds you buy today will help pay for a Magnavox radio-phonograph after the war.

Magnavox

THE OLDEST NAME IN RADIO



From musical amateur to England's greatest conductor is the success story of Sir Thomas Beecham. Early exposure to good music was his inspiration . . . the spark which kindled his genius. Man of fine education, in music he is largely self taught.

So marked was his early natural ability that at the age of ten he conducted an amateur orchestra. Next came a wide professional experience . . . first in opera, then as conductor of his own symphony orchestra.

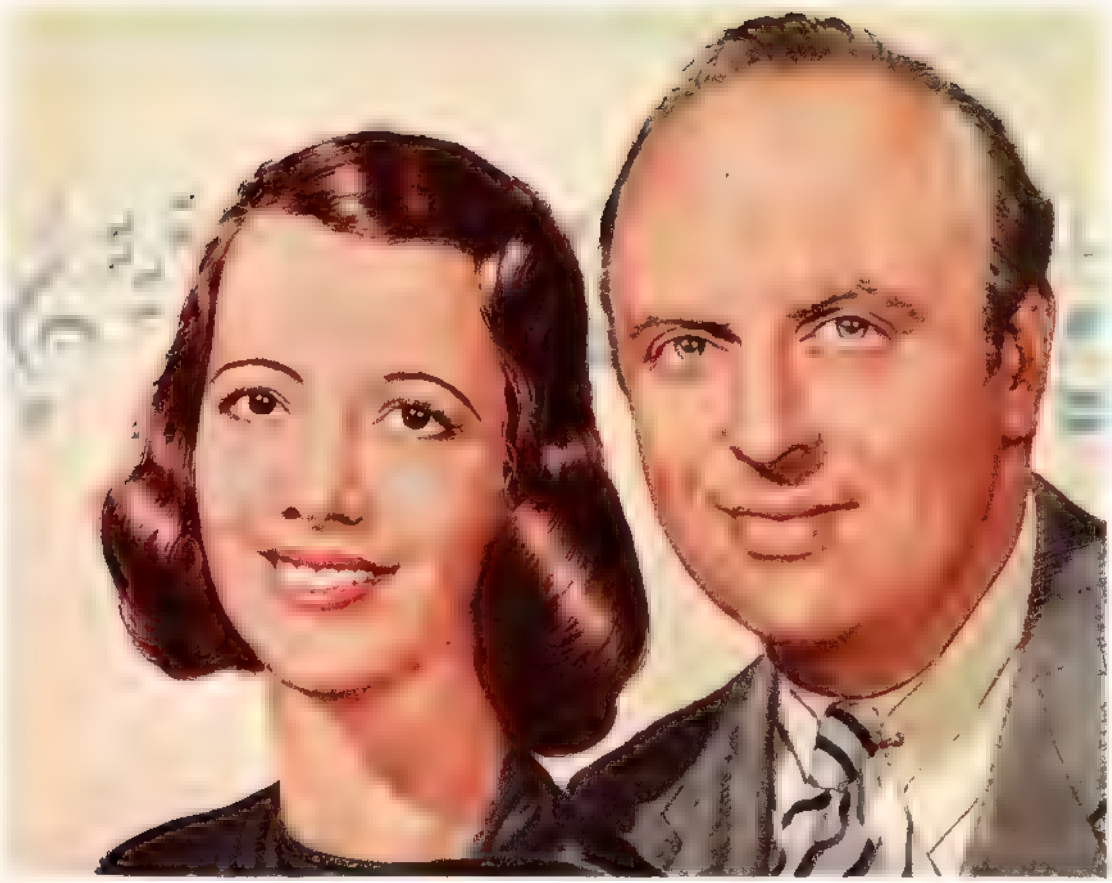
His profound versatility is evidenced by his long list of successes . . . as operatic impresario . . . as director of Covent Garden . . . as symphonic conductor . . . and as founder of the London Philharmonic Orchestra.

Like many another great artist he finds renewed inspiration and pleasant relaxation in listening to his Magnavox radio-phonograph. For in its rich, mellow tones he hears musical reproduction lifelike and true.

You, too, will thrill to its realistic clarity and fidelity whether you select radio or record programs.

The fine craftsmanship which won for Magnavox the first Navy "E" award and White Star Renewal Citation among instrument manufacturers has made these radio-phonographs the first choice of discriminating buyers.

MAGNAVOX



Lily Pons and Andre Kostelanetz, painted for Magnavox by Boris Chaliapin

First family of music . . .

A RECORD audience of 300,000 crowded into a joint summer concert in Chicago to pay tribute to the genius of Lily Pons and Andre Kostelanetz. The unique talents of this great coloratura soprano and her celebrated conductor-husband have brought the appreciation of good music within the ken of grateful millions.

Miss Pons has the admirable faculty of projecting her warm personality to audiences through her glorious voice and charming presentation of the classics.

Andre Kostelanetz has created a distinct symphonic style, and a new interpretation of the works of the old masters as well as the popular music of the day. This has brought to him a vast following of music lovers of all tastes.

Today these great musicians are bringing relaxation and comfort to men in our armed forces as well as those of us on the home front through their recordings and broadcasts.

Like other great artists Mr. and Mrs. Kostelanetz have chosen a Magnavox radio-phonograph for their home. For in Magnavox they find an incomparable clarity and trueness of tone which alone can do justice to the great music of the world.

Today no more Magnavox instruments are being made because the talent and craftsmanship which created these superb radio-phonographs are devoted to the production of electronic and communication equipment for the armed forces and music-distribution systems for warships. In the postwar era Magnavox will again take its place as the pre-eminent radio-phonograph combination.

The Magnavox Co., Fort Wayne, Ind.

Magnavox
RADIO PHONOGRAPH

Buy War Bonds For Fighting Power Today—Buying Power Tomorrow

THE CHOICE OF GREAT ARTISTS

HOW TO START A REVOLUTION!

YOU wouldn't take them for revolutionists, these men. They don't wear long black cloaks or employ secret passwords. But they're preparing to toss a bomb into American industry . . . to start the biggest revolution since 1776.

☆

WHO are these men? They're research specialists of the aviation industry. You see, it takes more than aeronautical engineers to build today's bombers. Here at Martin's, for example, are experts in metallurgy, plastics, synthetic rubber, hydraulics, electronics, ballistics and many other fields, united in one common cause . . . to make America supreme in the skies.

From the efforts of these Martin research men have come more than great aircraft. They have discovered new principles, developed new materials, devised new uses for old materials, found new manufacturing methods which promise to revolutionize American life.

The works of their research are now blasting America's way to Victory around the world. You'll see the mark of these men after Victory, not only in aircraft but on the homes in which you live, the cars you drive, the very clothes you wear. Tomorrow in a test tube!

What's more, America's postwar products and American technical skill are going to reach world-wide markets *fast*. Already Martin has completed designs for giant airliners of 125 or more tons, ready to build as soon as Victory gives the green light. Such ships will make neighbors of all nations . . . such ships will give seven-league boots to the peoples of all nations . . . such ships will bring the world to within hours of your doorstep.

America and the world have a glorious future ahead, when Victory is won. That's why we say, buy Bonds today, because you have a date with a new world after Victory!

THE GLENN L. MARTIN COMPANY
BALTIMORE, MD., U. S. A.

Member: AIRCRAFT WAR PRODUCTION COUNCIL, EAST COAST, INC.

Martin
AIRCRAFT
Builders of Dependable Aircraft Since 1909

NAVY'S CARGO SHIP

NAVY'S PATROL BOMBER

BRITAIN'S BALTIMORE

ARMY'S MARAUDER

Tomorrow

THE WORLD IS YOURS!

Rio . . . with guitars throbbing through the blue Brazilian night . . . Baghdad, where high-laden camels sway through narrow, latticed streets . . . Port Said, kaleidoscope of color, Babel of a hundred foreign tongues. Tomorrow, via air, the world is yours!

No flights of fancy are these flights of the future. Even now Martin aircraft are speeding the tools of war to the four corners of the globe. And when, after Victory, these lifelines become airlines, you will see and know the far lands of romance. Via air, two-week vacations will equal two months' today.

Via air, all nations will be neighbors, drawn together by bonds of travel and commerce. Via air, the peoples of the world will come to know each other, thus building for permanent peace.

Your ticket to romance is a U. S. War Bond. Each Bond you buy hastens the day of Victory . . . the day when aviation turns from the wings of war to the wings of peace. Already on Martin drawing boards lie complete designs for giant airliners of 125 tons, capable of carrying scores of passengers, tons of freight, to the farthest of horizons. Other Martin aircraft of 250 tons and more are being planned. You can help translate these great plans into reality. You can help build the breath-taking new world of the future. Buy War Bonds to the limit of your ability . . . for your country today, for you tomorrow.

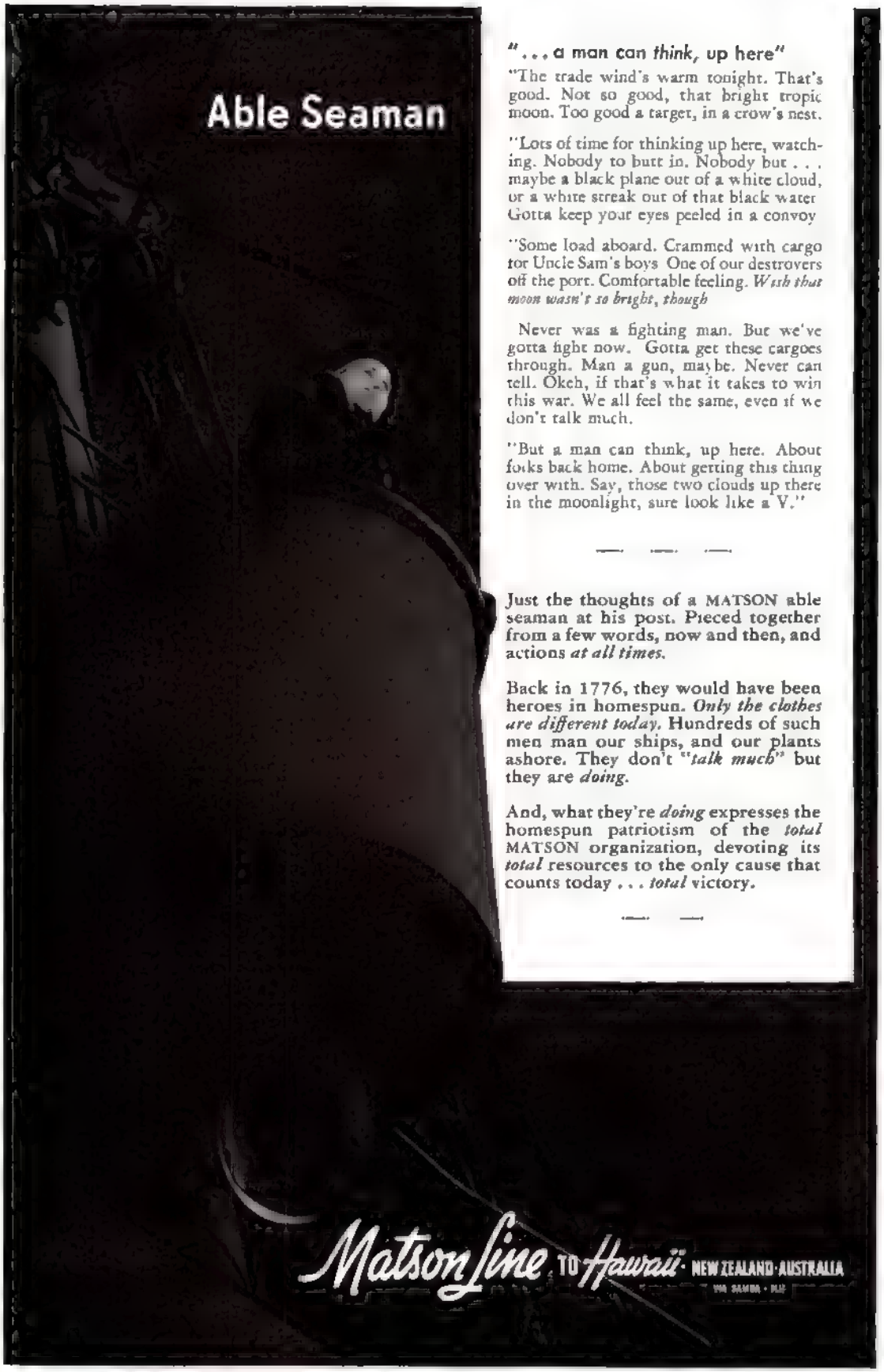
☆ ☆ ☆

The Glenn L. Martin Company,
Baltimore, Maryland, U.S.A.

Member — Aircraft War Production Council, East Coast, Inc.

Martin
AIRCRAFT

Builders of Dependable Aircraft Since 1909



"... a man can *think*, up here"

"The trade wind's warm tonight. That's good. Not so good, that bright tropic moon. Too good a target, in a crow's nest.

"Lots of time for thinking up here, watching. Nobody to butt in. Nobody but . . . maybe a black plane out of a white cloud, or a white streak out of that black water Gotta keep your eyes peeled in a convoy

"Some load aboard. Crammed with cargo for Uncle Sam's boys One of our destroyers off the port. Comfortable feeling. *Wish that moon wasn't so bright, though*

Never was a fighting man. But we've gotta fight now. Gotta get these cargoes through. Man a gun, maybe. Never can tell. Okeh, if that's what it takes to win this war. We all feel the same, even if we don't talk much.

"But a man can think, up here. About folks back home. About getting this thing over with. Say, those two clouds up there in the moonlight, sure look like a V."

— — —

Just the thoughts of a MATSON able seaman at his post. Pieced together from a few words, now and then, and actions *at all times*.

Back in 1776, they would have been heroes in homespun. *Only the clothes are different today.* Hundreds of such men man our ships, and our plants ashore. They don't "*talk much*" but they are *doing*.

And, what they're *doing* expresses the homespun patriotism of the *total* MATSON organization, devoting its *total* resources to the only cause that counts today . . . *total* victory.

— —

Matson Line TO Hawaii · NEW ZEALAND · AUSTRALIA

How much weight should a civilian carry?

IN THE PICTURE ABOVE, you can readily see that the soldier is carrying a substantial burden—equipment which weighs some 40 pounds. What you may not realize is that the civilian carries an equally heavy burden—a burden of overweight which he carries around day and night, in contrast with the soldier who can put aside his pack and rifle when he rests.

It's an unfortunate fact that excessive fat places a great deal of extra work on the heart, kidneys, and lungs—work from which there is no relief. That is why overweight can be a threat to health. Figures show that people over 45 who are 20% overweight have a death rate 50% above the average.

What causes excessive weight? Sometimes it is due to glandular disturbances. The most common causes are too much food, and not enough exercise.

When the body gets more food than it needs for its work, the excess is stored as fat. If less is eaten than is required, the body loses weight by burning some of its reserve fatty tissue. Exercise hastens the process, but by itself is seldom effective. This gives us the principle often used in planning programs to reduce weight.

If you are overweight and want to reduce to your "fighting" weight, you will be wise to start by having your doctor examine you thoroughly. With his advice, a diet can be planned which in normal cases will cause a moderate, steady loss in weight and at the same time adequately protect your health. Exercise, fitted to your age, condition, and occupation, will round out the program.

Avoid the use of reducing drugs except on the doctor's advice. Girls in their teens should especially avoid "fad" diets or the risk of reducing on their own responsibility.

To help those interested in watching their weight, Metropolitan offers a free booklet, 93-N, entitled, "Overweight and Underweight." Among other things it contains information about low-calorie diets and helpful exercises.

COPYRIGHT 1943 METROPOLITAN LIFE INSURANCE CO

75th ANNIVERSARY—1868-1943

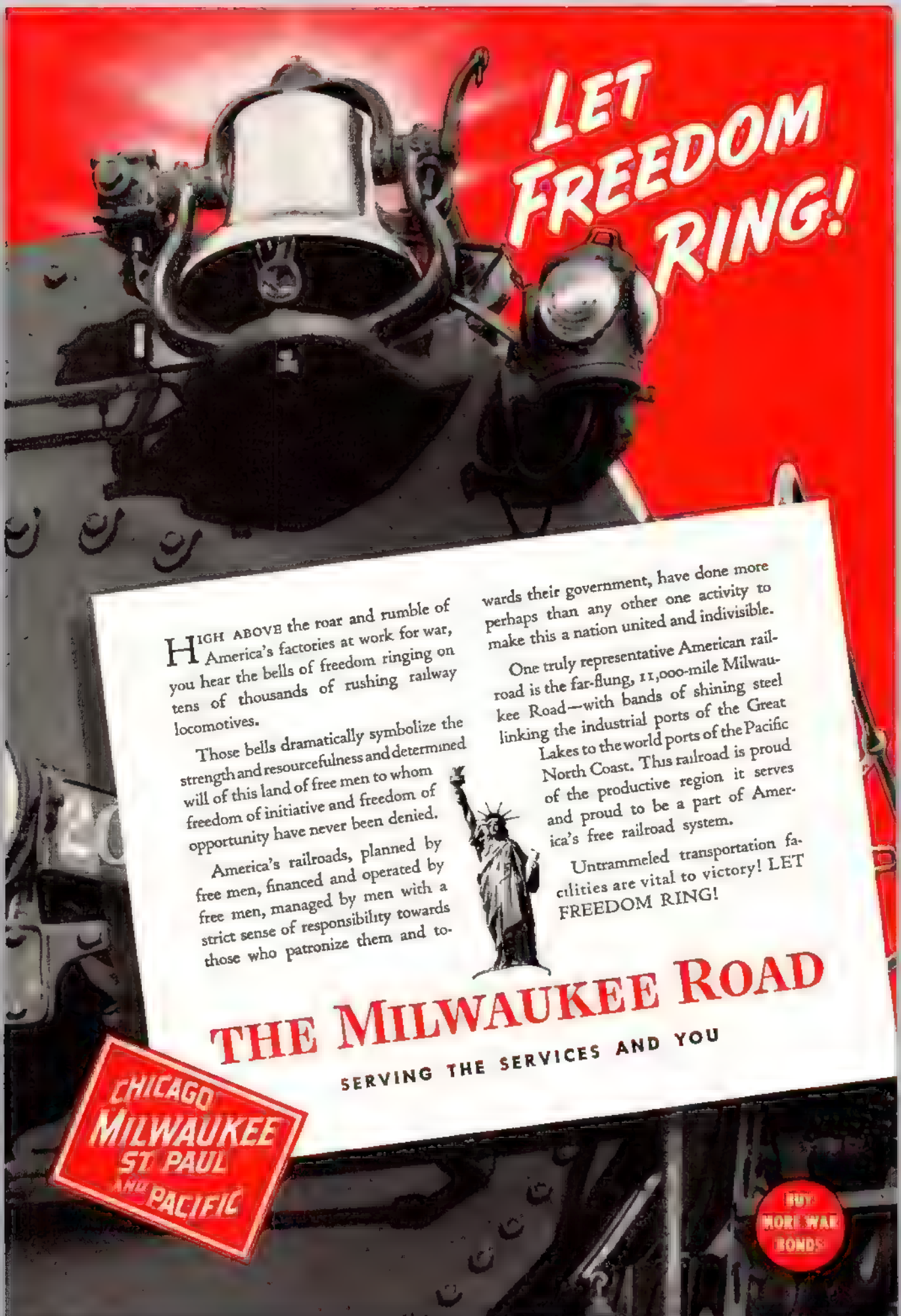
Metropolitan Life Insurance Company

(A MUTUAL COMPANY)

Frederick H. Ecker, CHAIRMAN OF THE BOARD

Leroy A. Lincoln, PRESIDENT

1 MADISON AVENUE, NEW YORK, N. Y.


LET FREEDOM RING!
HIGH ABOVE the roar and rumble of America's factories at work for war, you hear the bells of freedom ringing on tens of thousands of rushing railway locomotives.
Those bells dramatically symbolize the strength and resourcefulness and determined will of this land of free men to whom freedom of initiative and freedom of opportunity have never been denied.
America's railroads, planned by free men, financed and operated by free men, managed by men with a strict sense of responsibility towards those who patronize them and towards their government, have done more perhaps than any other one activity to make this a nation united and indivisible.
One truly representative American railroad is the far-flung, 11,000-mile Milwaukee Road—with bands of shining steel linking the industrial ports of the Great Lakes to the world ports of the Pacific North Coast. This railroad is proud of the productive region it serves and proud to be a part of America's free railroad system.
Untrammeled transportation facilities are vital to victory! LET FREEDOM RING!
THE MILWAUKEE ROAD
SERVING THE SERVICES AND YOU
CHICAGO MILWAUKEE ST. PAUL AND PACIFIC
BUY MORE WAR BONDS

"WHEN THE LAST BOMB GOES HOME..."

"Some dawn, our orders will come in.

"In the mist and the half light, we'll 'bomb up' as always. Strap on our parachutes. Take our places. Buckle our safety straps.

"Once again . . . familiar thunder will burst about our ears as the motors are gunned and the props bite bright circles in the air. Under our rumbling wheels the runway will tremble. Once more, the long driving rush and roar as we take to the sky!

"Some day, the cross-hairs of my sight will center a target. And at the cry 'Bombs away,' the last train will leave the bay and the last bomb will begin its long curved run to earth.

"And in its dull, exploding echoes, I shall hear the sullen crumble of walls, the crash of falling masonry and shattering glass, as the very *name* of the last stronghold of hate and lust and tyranny is purged forever from the world in one final burst of flame!

"Then—I'll turn homeward in the dusk. Home to my country, home to my town where I want unchanged, just as I left it, everything that is America to me. Everything! I hope they haven't even fixed the fence where the third picket from the gate was missing!

"Out here, America has come to mean just this to me . . . a country where I can live the way my folks and I have always lived . . . a country where there's work to do, where no one is ashamed to work, where there are no limits on a man's ambition or his opportunity to go as far as ability can take him—to grow as great as he wants to be. Whatever you do, don't change that, ever! I know now—*that's* what I'm fighting for!"

* * *

Here at Nash-Kelvinator, we're building giant new 2,000 horsepower engines for U. S. Navy Corsair *fighters . . . propellers for United Nations bombers . . . working to hurry the day when our boys will come home again, the day when we'll turn again to peaceful things, to the building of an even finer Kelvinator, an even greater Nash!*

* * *

NASH-KELVINATOR CORPORATION, DETROIT

Let's Speed the Day of Victory!
Buy More War Bonds!
Collect More Scrap!
Accept Rationing Cheerfully!

NASH KELVINATOR

In War, Builders of Pratt & Whitney Engines and Hamilton Standard Propellers.
In Peace, Nash Automobiles, Kelvinator Refrigerators and Appliances.

"I LOOKED INTO MY BROTHER'S FACE"

Even now, I can't sleep.

All night long the distant thunder of the guns was like the sad sound of surf along the shore at Manasquan where we spent last summer. And all night long I heard again the words I said bending over the litters as the wounded came in . . .

"Where are you hurt, soldier?"

Now, not even the blessed numbness we pray for in this place can keep me from living over and over again the moment when, sponging away the dark red mud, I looked into my brother's face.

He said, "Don't cry, Sis." And suddenly we were children again, playing nurse and wounded soldier on the battlefield of our yard back home, and I was crying because it seemed so real and I was scared.

I grew up last night.

Out here, I've seen my share of war. Women strafed in the streets . . . hospitals bombed . . . ripped sheets, splintered beds, the living and dead tumbled together. And I've stood it, because I'm an Army Nurse and that's my job.

But a nurse is a woman, first. And when someone you love is wounded, something breaks inside, and the war hits home.

Hits home to you . . . and to your mother and dad in the little Iowa town where you were born. Hits home to the heart of America.

And then you know why we're out here. Not for glory. Not for new worlds to conquer. Not for the sake of great, high-sounding words . .

But to make sure we keep on having the kind of America my brother and I grew up in . . . to make sure we'll always have a hand and a voice in helping to make it an even better land to live in. To make sure that we'll come home to the America we've always known . . . where we can make our lives what we want them to be . . . where we'll be free to live them out in peace and kindness and security.

That's what my brother and I are fighting for.

Keep it that way until we come back!

• • •

Here at Nash-Kelvinator, we're building 2,000 h.p. Pratt & Whitney engines for Navy Vought Corsair fighters . . . making intricate Hamilton Standard propellers . . . readying production lines to build Sikorsky helicopters for the Army Air Forces . . . working day and night to make sure our sons and brothers will soon be coming home again . . . to make certain that someday soon we'll turn again to peaceful things, to the building of an even finer Kelvinator, an even greater Nash.

NASH KELVINATOR CORPORATION

Kenosha · Milwaukee · DETROIT · Grand Rapids · Lansing

THEY **GIVE** THEIR LIVES,
WE **LEND** OUR MONEY.
BUY **MORE** WAR SAVINGS
BONDS AND STAMPS!

NASH AUTOMOBILES

KELVINATOR REFRIGERATORS AND ELECTRIC RANGES

MOSQUITO...WITH A DEADLY STING!

"Mosquitoes" are bad in Europe this year.

Spawned and bred in Britain, these lightning-fast, plywood bombers are whining over the big Rhine cities in broad daylight, or darting in at dusk to lead the way for the big fellows . . . raising welts and leaving scars awful to Nazi eyes.

It's Britain's pride—this new "Mosquito" that's streaking over Europe—and it's propellers for the "pride of Britain" that we're building here.

They're made by the many thousands, and for other bombers, too: British Lancasters . . . American Flying Fortresses and Liberators.

Bearing these planes aloft, each Nash-Kelvinator-made Hamilton Standard propeller is an engineering masterpiece—so beautifully machined that a puff of a man's breath can set it turning.

Into these "props" the men of Nash-Kelvinator are pouring not only their skill, but their heart's blood and the sweat of their brows! For their swift hands are guided to new records of accuracy and output by the knowledge that on these blades—*there ride the lives of their own brothers, and their own sons!*

• • •

NASH-KELVINATOR CORPORATION, DETROIT

Let's keep the battle rolling—with War Bonds and all the scrap we can collect!

NASH KELVINATOR

In War... Builders of Pratt & Whitney Engines and Hamilton Standard Propellers. In Peace... Nash Automobiles and Kelvinator Refrigerators.

BUY WAR BONDS AND STAMPS

"Butter that won't melt at 110°? ...Tell it to the Marines!"

Down on the equator, where joint U. S. forces have landed, fought and raised the flag, the long arm of science reaches out to serve our fighting men.

One example: *A preserved butter for export that will not melt at 110 degrees!*

This food is only one of many National Dairy products now being used by the armed forces of Democracy all over the world. It takes its place beside other scientific advances in the use of milk and milk products.

And National Dairy research is probing farther and farther into the potentialities of milk . . . developing, for instance, a milk fiber that is light and warm and looks like wool . . . opening new doors to the farmer, the manufacturer and the consumer.

National Dairy processes milk and many milk products for millions of American homes. By rigid adherence to high standards of purity . . . by a precise and far-flung system of *quality control* . . . by constant research . . . National Dairy daily safeguards the health and strength of millions of American people.

Dedicated to the wider use and better understanding of milk as a human food . . . as a base for the development of new products and materials . . . as a source of health and enduring progress on the farm and in the towns and cities of America.

NATIONAL DAIRY
PRODUCTS CORPORATION
AND AFFILIATED COMPANIES

Originators of the Sealtest System of Laboratory Protection

BUY WAR BONDS AND STAMPS

The General reviews his troops

There are no bands, no bunting. His field uniform is faded from work and weather. His ambling army is all out of step. . . . *But this veteran dairy farmer ranks high in America's military strategy!*

Men must eat before they can fight. Nations must have food with their freedom. And nature's best balanced food is *milk.*

America's dairy farmers made a magnificent contribution toward victory last year—nearly 120 *billion* pounds of milk—*a world's record production.* They did it in spite of labor and machinery shortages. They did it by working longer and harder—to help keep American workers and fighters *fit.*

The country can be proud of its farmers—for pitching in and producing bumper crops of corn, wheat, meat and other foods, too.

All food is *life* in a life-and-death struggle. Save food and you save lives. Save food and you help heroic farmers feed a hungry world.

We're sure that every American will cooperate in the nation's food conservation program. We're glad that our work at National Dairy can make an important contribution to this program, too.

Our laboratories will continue their far-reaching research—developing, from milk, new weapons for war and new products for peace.

Dedicated to the wider use and better understanding of dairy products as human food . . . as a base for the development of new products and materials . . . as a source of health and enduring progress on the farms and in the towns and cities of America.

NATIONAL DAIRY
PRODUCTS CORPORATION
AND AFFILIATED COMPANIES

Originators of the Sealtest System of Laboratory Protection

BUY WAR BONDS AND STAMPS

"...And you will have four beautiful children"

For once, the fortune teller is probably right. She has on her side the strong fact that healthy children usually grow into healthy parents, and healthy parents usually have healthy children.

America's children grow stronger and more healthy each successive generation. . . . This is a pleasant and encouraging vital statistic; one good reason for it is that each year America's scientists learn more about food—its properties, its possibilities, and its meaning in the life of an individual and in the progress of a people.

National Dairy Research is constantly adding to the fund of existing knowledge about one of the great basic human foods . . . milk, and milk products. The entire National Dairy organization is devoted to the translating of this knowledge into better methods of producing, processing and distributing milk for millions of people in many cities in the land.

By a system of precise and far-reaching *quality control*, National Dairy sets standards of purity and nutritive value. . . . By helping to make milk and its products better, more abundant and more available, National Dairy helps strengthen the life-lines of the nation.

Dedicated to the wider use and better understanding of milk as a human food . . . as a base for the development of new products and materials . . . as a source of health and enduring progress on the farm and in the towns and cities of America.

NATIONAL DAIRY
PRODUCTS CORPORATION
AND AFFILIATED COMPANIES

Originators of the Sealtest System of Laboratory Protection

BUY WAR BONDS AND STAMPS

"3 direct hits, sir — and 10 quarts of vanilla!"

"How're we doin'?" asked the pilot of the Boeing Flying Fortress high over Germany.

"Nazi factory—right on the nose!" said the tail gunner. "And the ice cream's ready to eat!"

They had anchored a can full of ice cream mix in the gunner's compartment. Now, after dodging flak and fighters, 6 miles up at 60° below, it was well shaken and well frozen.★

Safe back at base they celebrated the raid —with their favorite food treat. That's an American way of celebrating. Ice cream—as American as baseball or the Fourth of July.

But not just because it's homelike and delicious does ice cream appear so often on service menus. It's there because *it's a valuable food*, rich in vitamins and calcium.

In the spirit of American good sportsmanship, your family has reconciled itself to having less ice cream than before the war.

For our part, we'll continue to make as much ice cream as possible. We'll keep it pure and good.

And we'll continue—through war and peace—the constant research that is producing notable new dairy products and other nutritious foods.

★Based on an actual incident, reported by *The New York Times*

Dedicated to the wider use and better understanding of dairy products as human food . . . as a base for the development of new products and materials . . . as a source of health and enduring progress on the farms and in the towns and cities of America.

Kraft · Sealtest · Breyers

NATIONAL DAIRY
PRODUCTS CORPORATION
AND AFFILIATED COMPANIES

BUY WAR BONDS AND STAMPS

Here's what one leatherneck dreams about!

One Marine's dream of the post-war world is a mountain of strawberry ice cream. He wrote his girl from Guadalcanal that he wants it three times a day, every day for five years. In standard servings, that's over 900 quarts!

Strawberry ice cream was a symbol, of course, to a hot, tired fighting man in a foxhole—a symbol of his home town—a symbol of America. It must have appealed to lots of folks, for many newspapers carried the story.

There are good reasons why ice cream is on Army menus regularly — good reasons why busy war workers eat so much of it. It's more than a delicious dessert—*it's a valuable food*—rich in vitamins and calcium.

Right now, of course, ice cream must come from the same milk supply that furnishes milk, butter and cheese to soldiers, civilians and allies alike. That means less ice cream for your family's use. If you'll be content with your fair share—and accept part of your order in fruit ices—*you* can continue to enjoy ice cream.

And *we'll* continue to improve ice cream processing and packaging — controlling its quality — keeping it pure and good.

We'll continue our intensive laboratory research . . . developing important new products from milk . . . bringing to America's fighters, workers and friendly allies the full benefits of nature's most nearly perfect food.

Dedicated to the wider use and better understanding of dairy products as human food . . . as a base for the development of new products and materials . . . as a source of health and enduring progress on the farms and in the towns and cities of America.

NATIONAL DAIRY
PRODUCTS CORPORATION
AND AFFILIATED COMPANIES

Originators of the Sealtest System of Laboratory Protection

BUY WAR BONDS AND STAMPS

The egg of the month

"The one egg we are allotted each month is rarely obtainable in the shops, and if bought in the black market, costs about fifty cents. The hens are so poorly nourished they won't lay. I know a priest in a village near Cannes who performs the marriage ceremony only for eggs, and refuses to accept money."

Quoted from "How We Live in France," in the January, 1943, *Reader's Digest*, condensed from December 15, 1942, *Vogue*.

IF YOU had only one egg a month, what a banquet that egg would be! . . . The tragedy of France accents America's good fortune. Hens here are well-nourished—and working overtime to keep you well-nourished too!

Much of the credit goes to poultrymen who are feeding their flocks scientifically prepared emulsions of buttermilk, cheese whey, wheat germ, fish oil, and other ingredients.

American poultrymen use several million pounds of this specialized, protective feed every month—with remarkable results, reported in their letters. The feed helps chicks grow fast and resist disease. Added to the diet of hens, it encourages production of more eggs.

This balancing feed first grew out of an effort to make milk by-products more useful. It was developed in National Dairy laboratories and proved on a National Dairy experimental farm. It uses many million pounds of by-products, once wasted but now helping to increase the egg supply of the United Nations.

Yet this is only one side of National Dairy's broad, ceaseless research . . . research *over and above* the big day-by-day job of supplying quality-controlled milk products to millions of American families.

Dedicated to the wider use and better understanding of milk as a human food . . . as a base for the development of new products and materials . . . as a source of health and enduring progress on the farm and in the towns and cities of America.

NATIONAL DAIRY
PRODUCTS CORPORATION
AND AFFILIATED COMPANIES

Originators of the Sealtest System of Laboratory Protection

Wartime Guide to Grand Central Terminal

STEP FROM the heart of New York into the cathedral-like beauty of Grand Central Terminal.

Beneath this high, blue-vaulted ceiling now pass some 54,000,000 travelers a year. Boys on their way to war, watched to the train gates by bravely smiling parents. Workers journeying to war jobs. Business leaders speeding to win production battles.

Together they form part of the greatest traffic America's railroads have ever carried. A tremendous task, vital to Victory, and rich in promise for the future. For out of this experience will come the finer rail transport of tomorrow...when Grand Central will echo to the footsteps of free, victorious people bound on errands of peace.

1 14,800 QUESTIONS AN HOUR

Terminal information men answer 14,800 questions during a busy hour. To save holding up ticket lines, get information *in advance* at this booth or by telephone.

2 GRAND CENTRAL SERVICE FLAG

Honors 21,314 New York Central employees. Thousands of other Central workers have sons and daughters in uniform ... an added drive behind this railroad's war effort.

3 TICKET OFFICE 90% BUSIER

Though we've added extra windows and personnel to meet the rush, wartime travelers prefer to buy tickets at quieter mid-morning and early evening hours.

4 SERVICE MEN'S LOUNGE

This lounge is busiest on weekends when thousands travel on furlough. To give them room on weekend trains, plan trips you *must* make for *mid-week*.

5 54,000,000 PASSENGERS A YEAR

Through these train gates pass a record number of essential passengers...including many thousands of former auto travelers who must now be carried by train.

6 BAGGAGE CHECKING COUNTER

Some 150,000 pieces of baggage a month are now checked through Grand Central. People have learned to travel light, checking larger luggage, carrying only *one small grip* on crowded trains.

7 MAIN WAITING ROOM

Where some one may have to wait for a later train if *you* fail to cancel an unwanted reservation. These days, cancel reservations the *minute* plans change.

8 TROOPS ON THE MOVE

Today, half the nation's Pullmans and 30% of its coaches are needed to move 2,000,000 troops per month. One more reason railroads can't always provide the accommodations you want.

FREE WARTIME GUIDE TO GRAND CENTRAL

A fascinating booklet with large detailed cutaway view that takes you behind the scenes of the Terminal in wartime. Write Passenger Department, Room 1261H, 466 Lexington Avenue, New York.

BUY MORE WAR BONDS AND STAMPS

NEW YORK CENTRAL SYSTEM

New York Central

ONE OF AMERICA'S RAILROADS — ALL UNITED FOR VICTORY

What life is like on a troop train...

speeding over the Water Level Route

This is "Main 100"... identified on New York Central orders only by its code number. Speeding toward a secret destination, it's one of the vast fleet of trains that now move 2,000,000 troops a month over the rails of America. Picture the thousands of Pullmans and coaches this task requires. You'll see then why car space for civilian travel is limited . . . why Americans are urged to make only essential trips. *"Main 100" must have the right of way!*

FIELD KITCHEN. Mess Sergeant sets up kitchen in baggage car to serve 3 or 4 troop cars. That's what many baggage cars are doing. So please *travel light!*

MESS CALL. Men eat at their seats. On some trains they file up to kitchen to be served; on others, food is brought to them. Meals are tops . . . one reason *your* home and *our* diners are rationed.

FIRST AID. Army Surgeon installs his "field hospital" in a washroom. His prompt care for minor ills keeps our fighters fit.

G.H.Q. ON WHEELS. From his drawing room "headquarters," Train Commander orders all details of this traveling Army camp . . . of which he alone knows the destination.

RAILROAD LIAISON. New York Central "Train Escort" goes along to aid Train Commander with transportation, extra supplies, mail, special stops and other matters.

PREPARING FOR TAPS. At time set by Train Commander (later than in camp) Porter makes up berths . . . as carefully as he would for the most generous Pullman passenger.

V MAIL. Men write many letters, hoping for answers. To guard secrecy, none may be mailed except through the Train Escort at points designated by the Train Commander.

39 MEN TO A CAR. Two men sleep in lower berth, one in upper. Even so, troop moves now use half the Pullmans, a third of the coaches . . . one reason *you* may find space hard to get.

SEEING AMERICA. Troops spend much time at windows. Averaging six moves during training, they see the Hudson River and Great Lakes this trip . . . perhaps California next.

New York Central

NEW YORK CENTRAL SYSTEM

BUY MORE WAR BONDS

ONE OF AMERICA'S RAILROADS—ALL UNITED FOR VICTORY

MANOIR RICHELIEU *and Cottages*

MURRAY BAY • QUEBEC

● **Time-off,** this summer, must be *time wisely spent* . . . as it will be *at the Manoir.* Whether you're coming for rest . . . for relaxation . . . for the miracle that complete change of setting and pace can perform . . . you'll find everything here in happy abundance to help you enjoy your "leave-of-absence" to the full. Superb golf, tennis, salt-water pool, riding . . . in pine-scented, pollen-free Laurentian air . . . high above the cool St. Lawrence River. Fishing in well-stocked private lakes. Dancing in the casino. Daily service from Montreal by famous river steamers . . . or by rail. No passports required. Favorable currency exchange.

OPENS JUNE 21

Room with bath and meals, from $9 per day. Apply Myron H. Holley, Manager, Murray Bay, Quebec; or Canada Steamship Lines offices in principal cities; or your Travel Agent.

A DIVISION OF CANADA STEAMSHIP LINES

Water Lily

Gracefully cupped petals and smooth round leaves combined with new and original art shapes. Fifty pieces — Rose, Ciel Blue, Walnut Brown. Moderately priced at department stores and gift shops everywhere.

Send 10c for fascinating pottery booklet

ROSEVILLE POTTERY, INC., Dept. N-63, ZANESVILLE, OHIO

ROSEVILLE DECORATIVE ART POTTERY

CHAMPION-INTERNATIONAL COMPANY

Manufacturers of the paper used in

THE NATIONAL GEOGRAPHIC MAGAZINE

and other high-grade coated paper

OFFICE-MILL - - LAWRENCE, MASS.

FOR EXTRA SHAVING COMFORT

Compact Shave Set $1.00

Brushless Shaving Cream and Tube of Talcum

Men who insist upon maximum comfort and minimum fuss in good grooming, appreciate Old Spice shaving requisites. This new Shave Set is typical of Shulton quality and practicality. The Brushless Cream works fast and effectively—the Old Spice-scented Talcum cools and refreshes—the cleverly designed kit of travel-light paperboard packs conveniently into suitcase or duffel bag . . . ***Old Spice Shaving Creams, Shave Soap, Talcum, After-Shave Lotion and Bath Soap available singly or in sets.***

A SHULTON ORIGINAL

*Trade Mark Reg. U. S. Pat. Off. • SHULTON, INC.

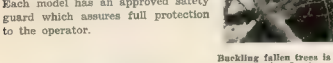
Rockefeller Center • 630 Fifth Avenue, New York, N. Y.

"Buy U. S. War Bonds—They Identify You"

Mall PORTABLE CHAIN SAWS—Gasoline Engine, Air and Electric

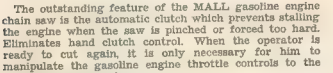
There is a MALL chain saw, gasoline engine, air or electrically driven, for every cutting job. MALL chain saws are indispensable to contractors and engineers, railroads, bridge builders, public utilities, timber operators and road builders for felling and buckling trees and for cutting large timbers. Compactness, simple design, lightweight and portability have been built into MALL chain saws to make them the easiest serviced, fastest cutting chain saws on the market. Heavy timber cutting can be done economically and easily. Each model has an approved safety guard which assures full protection to the operator.

Buckling fallen trees is an ideal job for MALL chain saws. Square butt logs are assured. On tree felling, fast, accurate cuts with low stumps can be made with savings in timber and labor.



MALL GASOLINE ENGINE CHAIN SAWS with gasoline engine mounted directly on the saw are available with 5 h.p., 2-cycle, air-cooled gasoline engines. Sizes—24", 36", 48". Easily transported and operated. Fully protected for maximum safety. A chain saw sharpening attachment for fast accurate sharpening in the field can be furnished as optional equipment. Cuts through a 24" diameter water-soaked oak log in about 1¼ minutes.

The outstanding feature of the MALL gasoline engine chain saw is the automatic clutch which prevents stalling the engine when the saw is pinched or forced too hard. Eliminates hand clutch control. When the operator is ready to cut again, it is only necessary for him to manipulate the gasoline engine throttle controls to the desired engine speed.



MALL PNEUMATIC CHAIN SAWS are ideal for topping poles and cutting poles under water as efficiently as above water, also, for tree felling and buckling, cutting large timbers and lumber. Can be furnished with various sizes of vane-type air motors—24", 36" and 48" capacities. Each chain saw has a special lubrication reservoir for proper lubrication of the saw chain during operation. Cuts through a 24" water-soaked oak log in less than 1½ minutes.

MALL REPLACEMENT SAW CHAINS AND SPROCKETS can be furnished in any length for every make and model of chain saw. You can make faster and more accurate cuts at lower costs with MALL chains.

MALL PNEUMATIC CIRCULAR SAW. This pneumatic circular saw incorporates many time and labor-saving features. Has telescopic spring-operated safety guard which pushes back as the saw cuts through the material. Exhaust air keeps the cutting line clear. Observation glass permits operator to follow the cutting line. Powerful air motor. Can also be furnished with special blades or cut-off wheels for cutting concrete, sheet aluminum, terrazzo or tile. Free speed: 1400 r p m, 12" blade. Base adjusts from 1⅝" to 4½". Cutting capacity: 4½"—3⅜" at 45-degree angle. Net weight: 22 pounds.

PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

38-1-43

PLACING COSTS GO DOWN WITH *Mall* VIBRATORS

A Type and Size for Every Construction Job!

MALL 3 H.P., 3-PHASE GEARED HEAD CONCRETE VIBRATOR. Motor operates at 3,450 r.p.m. on 60-cycle current, but is geared to deliver 7,000 vibration frequencies per minute. Has dustproof motor and built-in dustproof switch. Entire assembly built for light weight and portability. Available for 110-volt or 220-volt current. Has 360-degree swivel low round base and can be furnished with various sizes of vibrating elements and different lengths of flexible shafting. This is an extra-heavy-duty unit, adapted specifically for the vibrating of concrete in dams, locks, piers and other heavy types of construction. Powerful, light weight, and easily operated by one man!

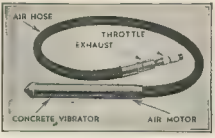
MALL 3 h.p. geared head concrete vibrator. This powerful unit delivers 3,000 vibration frequencies per minute under load. Ideal for placing concrete on all types of construction.

MALL Universal Vibrators

Placing mass concrete with a MALL 1½ h.p. universal electric concrete vibrator. Power, speed and easy handling combine to make this one of the most effective vibrators available for placing low water-cement ratio concrete.

MALL 1½ H.P. UNIVERSAL ELECTRIC CONCRETE VIBRATOR. Will operate on A.C. or D.C. current. Can be furnished for either 110-volt or 220-volt. Delivers 9,000 vibration frequencies per minute under load. Available with 14', 21' or 28' of flexible shafting and 2¾" diameter vibrating element. Has low round base mounting and convenient carrying handle. Concrete levels off quickly and reaches the most inaccessible places in the forms with this unit.

MALL Pneumatic Vibrators



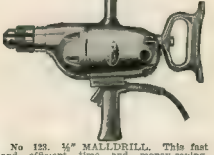
MALL PNEUMATIC CONCRETE VIBRATOR. Delivers 9 000 vibration frequencies per minute at 80 pounds air pressure. Air consumption is approximately 70 cubic feet per minute. Equipped with grip throttle. Available with 2½" diameter concrete vibrating element. This unit is recommended for placing concrete in tunnels, caissons and other deep construction work where, because of unfavorable air conditions, electric or gasoline engine power units are not practical.

PORTABLE ELECTRIC MALLDRILLS

For Drilling in Wood and Metals

No. 145T. ¼" PISTOL-GRIP MALLDRILL. The most powerful small drill made. High speed, streamline in design and light in weight. Drills clean, uniform holes in metal or wood. Ideal for drilling in close quarters. Equipped with pistol grip and powerful universal-type motor. Available for 110-volt A.C. or D.C., or 220-volt A.C. or D.C. current. Free speed, 2,000 r.p.m.; shipping weight, 4¾ pounds

Model 144. ¼" HEAVY-DUTY MALLDRILL. The main features of this drill are its ease of handling, serviceability, abundant power and that it can be used in close quarters because of its compact rugged construction. The distance from the center of the chuck to the top of the drill is 5". The over-all length is 8¼"; over-all height, 7½"; no load speed, 4,600 r.p.m. Net weight without cord, 3½ pounds; net weight with cord, 5 pounds.



No 123. ½" MALLDRILL. This fast and efficient time and money-saving, heavy-duty drill is designed for mass production or general maintenance work. It is beautifully streamlined and ruggedly constructed for long, hard usage. Equipped with powerful, ball-bearing motor, alloy steel spur gears, heat-treated, and the finest chucks. Available for 110-volt A.C. or D.C., or 220-volt A.C. or D.C. current. Free speed, 560 r.p.m. Shipping weight, 16 pounds.

PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

38-3-43

LISTER-BLACKSTONE NITE-HAWK

Portable Floodlight and Searchlight Units

The Nite-Hawk is a handy, portable floodlight unit easily towed by an auto or small truck, built to give you light "where you want it—when you want it."

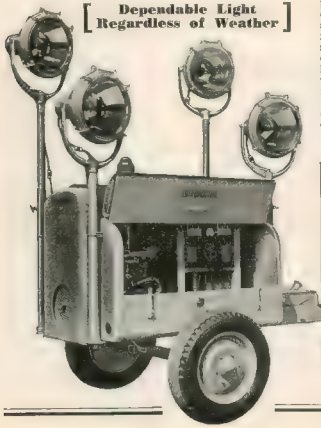
Variety of Uses

It is a fully self-contained source of light and fills the need where power lines are unavailable or where the connection and set-up would be too expensive. The outfit is especially handy for night operations such as construction work of all types, emergency airport lighting, police and fire department calls, dock, terminal and warehouse lighting, in holds of ships, around factory yards, in quarries and gravel pits, for night logging, in lumber yards, around shipyards, in parks—any place where light is needed; for either continuous operation or emergency or stand-by service.

Floodlight Model

Four 1000-watt wide-angle floodlights, one on each corner, cast powerful beams in the same or different directions. Each light is individually operated from a control panel and is adjustable up and down, and in all directions. The lights may be raised to a height of 8½ feet and swung in a 180° vertical arc.

[Dependable Light Regardless of Weather]



Searchlight Model

The Nite-Hawk may be obtained with two 30,000 candle power floodlights and a 7 million candle power searchlight. Effective lighting range one mile.

Powers Hand Tools

In addition to providing light, the Nite-Hawk has a control panel with receptacles for operating small Universal hand tools; such as, electric drills, saws and hammers. Disconnect fittings in each floodlight cable provide additional power outlets.

Power Assembly

Power is supplied by an air-cooled 4-cylinder engine, equipped with an electric starter. A 5000-watt self-regulating A.C. generator, connected to the engine, delivers direct current at 110 to 120 volts, the voltage being adjustable by means of a rheostat located on the control panel. A sheet steel enclosure with hinged side covers houses the entire assembly, including large tool boxes. Louvers at the generator end and an overhead ventilator permit air to escape when the housing is closed.

Mounting

The Nite-Hawk is mounted on heavy-duty, multiple-leaf steel springs with two taper roller bearing equipped all-steel wheels. Pneumatic tires will be supplied on war orders only if the requirements necessary for securing them are met. A retractable steel caster wheel provides support for the towing end when the Nite-Hawk is parked. Quickly, with little effort, the outfit is hitched to the towing vehicle. Nite-Hawks are also available without running gear for truck mounting.

These machines can also be secured equipped with direct current generators. Full details will be sent on request.

Specifications

	NH5-S	NH5-W
Model		
Mounting	Skid	2 Pneumatic Tires
Capacity, Watts (A.C. or D.C.)	5000	5000
Over-all Dimensions:		
Length	6'8"	9'4"
Width	4'4"	5'0"
Height:		
Lights Down	8'0"	7'1"
Lights Up	7'9"	8'10"
Net Weight, Pounds	1675	1775

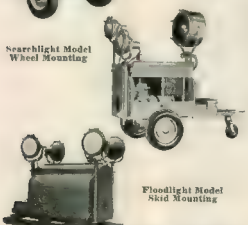
Either Model can be supplied with combinations of searchlights and floodlights.

Floodlight Model

STANDARD EQUIPMENT ON ALL
NITE-HAWK *FLOODLIGHT AND SEARCHLIGHT MODELS*

- 4-cylinder, air cooled, valve-in-head gasoline engine.
- Electric starting system complete with storage battery and charging apparatus.
- Self-regulating A.C. or D.C. generator; supplies current for most sizes of small universal tools or for extension lights. Capacities, 5000 watts upward. Searchlight models equipped with A.C. generators only.
- Electrically lighted control panel.
- Duplex receptacle on control panel.
- Rheostat on control panel to regulate voltage.
- Automatic circuit breaker on control panel.
- Separate switch for each light.
- Each circuit fused.
- Two side-mounted, lockable, tool boxes are an integral part of housing on both skid-mounted and wheel-mounted models.
- Lockable gasoline cap on fuel tank.
- Heavy-duty multiple-leaf, steel springs on wheel-mounted models.
- Steel wheels equipped with 6:00x16 pneumatic tires supplied on war contracts; otherwise, steel rims are furnished.
- Floodlights may be raised to a height of 8½ feet and swung in a 180-degree vertical arc.
- Each floodlight cable is fitted with disconnects which permits floodlight to be used away from the unit. When lights are not in use the disconnects can be used as a power tap.
- Complete set of light bulbs included with all models; in addition, two spare floodlight bulbs with each floodlight unit . . . one spare floodlight bulb with each searchlight unit.
- One spare panel light bulb and one box of fuses with all units.

Floodlight Model (Closed) Wheel Mounting



Searchlight Model Wheel Mounting

Floodlight Model Skid Mounting

Searchlight Model A Mile of Light!

FLOODLIGHTS MODELS—Single phase, 2 Wire, 60 Cycle, 110-120 Volts—Alternating Current or 2 Wire, 110-120 Volts Direct Current

Model	Type of Mounting	Rated Capacity of Generator	FLOODLIGHTS		Approx Shipping Weight in Pounds
			Number	Candle Power Per Light	
NHS-S	Skid	5 KW	4	30,000	1725
NHS-W	2 Pneumatic Tires	5 KW	4	30,000	1875

SEARCHLIGHTS MODELS—2 Wire, 110-120 Volts—Alternating Current

Model	Type of Mounting	Rated Capacity of Generator	LIGHTS		Approx Shipping Weight in Pounds
			Number	Candle Power Per Light	
24S-NHS-S	Skid	5 KW	1 searchlight 2 floodlights	7,000,000 Range-1 Mile 30,000 C.P	1875
24ZS-NHS-S	Skid	5 KW	2 searchlights	7,000,000 Range 1½ Miles	2075
24S-NHS-W	2 Pneumatic Tires	5 KW	1 searchlight 2 floodlights	7,000,000 Range-1 Mile 30,000 C.P	1975
24ZS-NHS-W	2 Pneumatic Tires	5 KW	2 searchlights	7,000,000 Range 1½ Miles	2230

EXTRAS

In addition to the standard equipment included with these units, the following are a few of the many items of special accessories with which they can be equipped

Signaling Devices—Air Raid Sirens—up to 6-mile range Coding type calling devices for remote signaling. Aerial traffic signals.

Hand Tools Electric drills soldering irons, saws, sanders, buffers hammers, grinders, etc.

Miscellaneous—Welding attachment to 200 amp. capacity, additional floodlights and other electrically operated equipment within the capacity of the generator. Special units with other voltage and current characteristics built to suit individual requirements.

Homespun Weave Cotton Suiting Sport Coats

- Choice of 2 patterns . . . black plaid and houndstooth
- Complete with 3 button front and lot o sleeves

$18.00

Your T lo sh sport c at. Sensati. tyle of hom spun cotton we . Has 3 button fr . gged jacketa new sport col lar, w sleeves, and 2 coac st. le side pockets. It's a hit s ring sty e that's also ideal for summer. Choice of 2 patterns every boy s sp rtsjacket should have. Sizes 6 to 20—state size.

27-8290—Wh ar . in solid brown, b. houndstooth check. Rayon and cotton suiting with fine grain. Sizes 6 to 20—state size. Pack ed ½ dozen to box. Doz. 18.00

27-8291 — Same type cloth as the one pictured at left. Choice of 2 patterns. Boys' sizes 6 to 20. Packed ½ dozen to box. Doz. 18.00

Fine Quality "Station-Wagon" Coat

- Rides water repellent finish
- Made of fine quality gabardine

$3.25

F ne quality gabardine sport coat with water repellent finish. Has 2 pockets, slash style, and 2 inside pockets. Has 3 button fly front. Sizes 6 to 20. Large 13 inch collar. Fabric has been treated with a water repellent finish. Sizes 6 to 20—state size.

27-4807 Tan, 1 in box. . . . Each 3.25

Water Repellent Cotton Gabardine Jacket

- Has the Impregnole water repellent finish
- Cement mould complete with elastic sides
- Popular button fly front

$21.00 Doz.

Water repellent Impregnole finish is one guarantee with the fine cotton gabardine. Has 2 pockets, 2 inside pockets, and 3 button fly front. Sizes 6 to 20—state size.

27-4806—Beach tan color, ½ dozen in box

Dozen 21.00

Boys' Swim Trunks in Wide Selection of Fabrics and Colors

Novelty Stretch Cotton

Ⓐ White with stripes. Has elastic at waist and leg openings. Knitted cuff at leg. Knitted collar and opening at front. Has sewn on small label. Sizes 6 to 20—state size.

21-8205—1 doz. in box. Doz. 3.00

70% Cotton, 30% Rayon

Ⓑ Two-tone, knitted cotton with 30% rayon. Has elastic at waist and leg openings. Knitted collar and opening at front. Has sewn on small label. Sizes 6 to 20—state sizes.

21-8225—1 doz. in box. Doz. 4.50

80% Cotton 20% Wool

Ⓒ Novelty wool. Has elastic at waist and leg openings. Knitted collar and opening at front. Has sewn on small label. Sizes 6 to 20—state sizes. Large 18 sizes 14 to 20—state sizes.

21-8231—1 doz. in box. Doz. 5.75

Satin Lastex

Ⓓ Novelty plaid and figured satin with lastex. Has elastic at waist and leg openings. Knitted collar and opening at front. Has sewn on small label. Sizes 6 to 20—state sizes.

21-8239 1 doz. Doz. 6.95

Heavy Cotton

Ⓔ Novelty all heavy cotton. Has elastic at waist and leg openings. Knitted collar and opening at front. Has sewn on small label. Sizes 6 to 20—state sizes.

21-8258—1 doz. in box. Doz. 8.25

Novelty Stretch Cotton

Ⓕ Novelty stripe and figured. Has elastic at waist and leg openings. Knitted collar and opening at front. Has sewn on small label. Sizes 6 to 20—state sizes.

21-8237—½ dozen in box. Doz. 8.25

80% Cotton, 20% Wool

Ⓖ Novelty wool suiting. Has elastic at waist and leg openings. Knitted collar and opening at front. Has sewn on small label. Sizes 6 to 20—state sizes.

21-8293—Tan. Doz.
21-8293-1 Blue.
21-8293-3 Maroon 12.00

Rayon and Cotton

Ⓗ Plain and stretch. Has elastic at waist and leg openings. Knitted collar and opening at front. Has sewn on small label. Sizes 6 to 20—state sizes.

21-8256 ½ dozen in box. Doz. 8.25

English Shorts in Solid Colors and Patterns

- Quality 285 Weight Cotton
- Is requisite for shed
- Elastic inserts in waist

Ⓘ Two-way stretch. Has elastic at waist and leg openings. Knitted collar and opening at front. Has sewn on small label. Sizes 6 to 20—state sizes. Not stocked in Minneapolis.

27-8595—Khaki. Sizes 6 to 20—state sizes. Not stocked in Minneapolis. Doz. 6.00

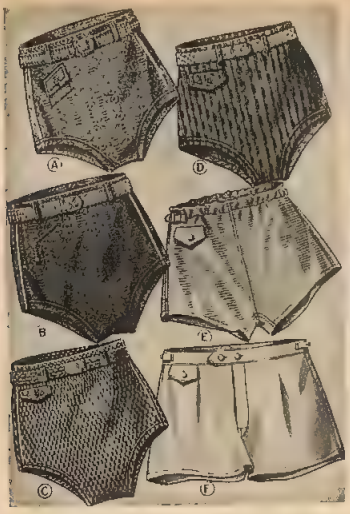
27-8596—Navy Blue. Sizes 6 to 20—state sizes. Doz. 6.00

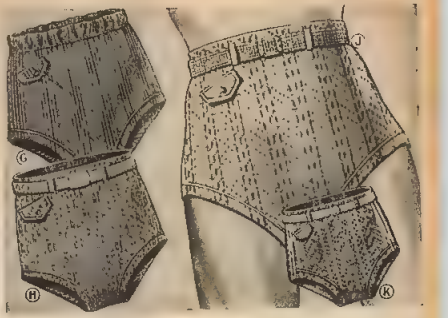
- Woven checks and plaids
- Fully sanforized shrunk
- Elastic inserts at waist

Ⓙ Two-way stretch. Has elastic at waist and leg openings. Knitted collar and opening at front. Has sewn on small label. Sizes 6 to 20—state sizes. Solid sizes 6 to 20. 1—state size may vary.

Doz.
27-8599-1—Wine. 6.00
27-8599-3—Brown.

SWIM TRUNKS . . . KNIT AND BOXER TYPES





Our Best Quality Trunks

- Soft pure zephyr wool
- One pocket with flap

$22.50 Doz

Ⓒ Novelty dress stitch. Wide elastic at deep top hem. Drawstring. Supporter. Solid even sizes 30 to 40—state sizes. ¼ doz. in box.

21-E184-1 Maroon } Doz
21-E184-2 Navy Blue } 22.50

Ⓚ Novelty stitch. Wide brad belt with metal buckle. Supporter. Solid even sizes 30 to 40—state sizes. ¼ doz. in box.

21-E165-1—Maroon } Doz
21-E183-2—Navy Blue } 27.50

Favorite Pattern In All Or Part Wool

- Novelty knit design. Good weight
- Heavy brad belt, metal buckle
- Supporter. 1-button flap pocket

$15.00 Doz

All Wool. Dries quickly, won't pull out of shape. Solid even sizes 30 to 40—State sizes. ¼ doz. in box.

21-E176—Navy blue }
21-E176-1 Maroon } Doz
21-E176-2—Teal } 15.00

EXTRA SIZES 46-48—State sizes.

Part Wool. 80% cotton and 20% wool. Solid even sizes 30 to 40—State sizes. ¼ doz. in box.

21-E158—Maroon }
21-E158-1 Tan } Doz
21-E158-2—Teal } 12.00

Ash Wool

21-E163—Navy. ¼ dozen in box. .... Doz 13.50

PERCALE & BROADCLOTH PAJAMAS

Asstd. Percales

Balmar Brand. Stripes neck and cuff, solid color trousers. Assid sizes A, B, C, D—state sizes.

27-C107—¼ doz. in box. Doz 14.50

Striped Percale

Valor Brand. Assid. blue stripes. Vat dyed. Coat style. Drawstring. Sizes Assid A, B, C, D—state sizes. ¼ doz. in box

27-C109—Middy style
27-C106—Stripe neck coat style.

Doz 16.50

SIZE SCALE FOR ALL PAJAMAS

Size	A	B	C	D
Chest	34-36	38-40	42-44	46-48

Good Quality Cotton and Rayon Trunks

$12.00 Doz and up

- Good looking fancy knits and woven fabrics

Novelty Stitch—Web Belt

Ⓐ Cotton and rayon. Satin stripes. Web belt. Army Regulation metal buckle. Button pocket. Snap outer flap pocket. Knit supporter. Solid even sizes 30 to 40—state sizes.

21-E156—Royal Blue }
21-E154-1 Maroon } ¼ Doz. in box
21-E156-2—Teal Blue } Doz 12.00

Novelty Stitch—Web Belt

Ⓑ Cotton rayon. Metal buckle with two snaps at side. Button pocket at side. Supporter. Solid even sizes 30 to 40—state sizes.

21-E157—Royal blue }
21-E157-1—Maroon } ¼ Doz. in box
21-E157-2 Teal } Doz. 12.00

Basket Weave—Web Belt

Ⓒ Cotton and rayon. Contrasting color stripes. Metal buckle. Flap pocket. Knit supporter. Solid even sizes 30 to 40—state sizes.

21-E178—Mist Blue }
21-E178-1—Maroon } ¼ Doz. in box
21-E170-2 Army Tan } Doz. 14.50

Heavy Rib Stitch—Web Belt

Ⓓ Cotton and rayon. Button pocket. Supporter. Solid even sizes 30 to 40—state sizes. ¼ doz. in box.

21-E179—Maroon. Blue stripe
21-E179-2—Tan. Brown stripe
21-E179-1 Dark Blue with tan and maroon stripe } Doz 14.50

Poplin—Cut and Sewn Style

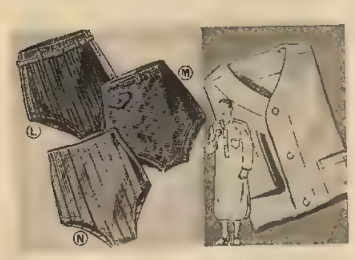
Ⓔ Cotton and rayon poplin. Loose fitting. Drawstring top with 2 side buckles. Supporter. Contrasting stripe at side. Solid even sizes 30 to 40—state sizes. ¼ doz. in box.

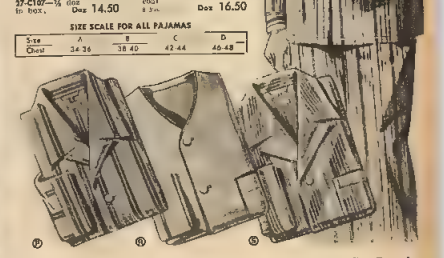
21-E171 Dark Tan } Doz 15.00

Water Repellent Cotton Poplin

Ⓕ Loose fitting cut and sewn type. Pleated front. Button flap pocket. Button fly front adjustable straps on sides. Solid even sizes 30 to 40—state sizes. ¼ doz. in box

21-E172 Natural
21-E172-1—Tan } Doz 15.50





Inexpensive Trunks

Low **$5.50** Doz

- All with knitted supporters

Ⓛ All cotton. Web belt metal buckle side stripes. Assid navy 2 maroon solid sizes small, med., large—state sizes.

21-E110—½ doz in box. . . Doz 5.50

Ⓜ Cotton and rayon zig zag knit. Box ring belt. Assid 2 royal blue, 2 maroon, 1 tan. Solid sizes small, med. large—state sizes.

21-E140—½ doz in box Doz 8.50

Ⓝ Cotton and rayon cluster ribbed. Swiss stripes. Assid 2 royal blue 2 maroon 1 tan. Solid sizes small, med., large—state sizes.

21-E136—½ doz in box Doz 8.50

Nightshirt

Valor Brand—Made of good count plain white cotton. Full length. Double neck front and back yoke. Double button front. Pocket at left side. Assorted sizes 14½ to 17. Sewn stitched throughout. Safety reinforcements at neck, pocket, bottom. Sizes small, medium, large—state sizes.

$12.35 Doz

27-C300—½ dozen in box Doz 12.35

Cotton Broadcloth Pajamas—Vat Dyed Colors

- Button Hemway Brand. All are button front coat style
- A, have drawstring tops on pants. One breast pocket

Ⓟ Good count Striped Patterns—Notched collar style. Assid stripes in medium and dark patterns. Assid blue, tan, green. Sizes A, B, C, D—state sizes

27-C104—½ dozen in box Doz 21.00

Ⓡ Good Count Solid Color Samples—Assorted tan, blue, green. Sizes A, B, C—state sizes

27-C112—½ dozen in box Doz 21.00

Ⓢ 100x80 Count Striped Patterns—Notched collar style. Assid light and dark stripes on brown, tan, green, white. Solid sizes A, B, C, D—state sizes

27-C112—½ dozen in box Doz 24.00

Best Quality Percale

- Surplice neck button front style
- Pants made with drawstring tops

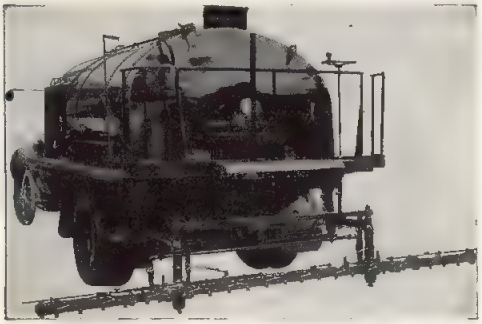
Valor Brand. Our best quality percale in bright new blazer stripe patterns. Surplice neck button front style. Vat dyed. Full coat. Breast pocket. Assorted blue, tan, green. Assid sizes A, B, C, D—state sizes.

27-C114—½ dozen in box Doz 19.50

ROSCO BITUMINOUS MATERIAL DISTRIBUTOR

Rosco 7-Way Valve with Balanced Compensator Automatically Provides Correct Distribution at Uniform Pressure

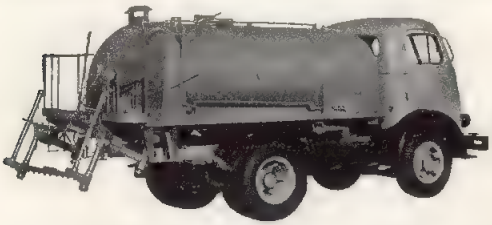
Completely Controlled Application to Meet Most Exacting Conditions



RCE Model Spraybar Circulates Full Length Whether Horizontal or Folded

Pressure type — built to handle any kind of bituminous material—elliptical tank—return bend, high radiation heat flues, set low in tank—single or double burners — with or without insulation — rotary power fuel pump with V-belt clutch—4-cylinder gas engine, water cooled—reverse suction (no-drip) spraybar—one lever Rosco 7-Way Valve with built-in automatic by-pass relief, controls **loading, circulating, spraying, reverse suction** and **to regulate pressure.**

All piping to rear of distributor within the tank engine, pump and spraybar controls at operator's rear platform entire distributor streamline housed, with ample doors and openings for accessibility—front mounting of engine, pump and 7-way valve, for weight distribution—safety—cleanliness.

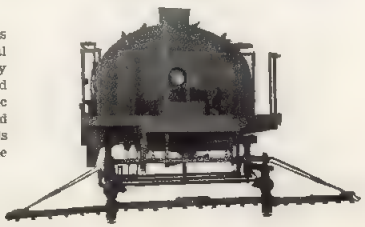


The Only Valve with Seven Distinct Operating Functions

Furnished in four models—tank sizes 700 gallon and up—for truck or trailer mounting. All models may be equipped with full circulating spraybar.

Four Rosco Distributor Models	RCE	RSE	RSD	RJD
Engine—with heavy duty clutch	3⅝x4½	3⅝x4½	3¼x4	3¼x4
Pump—rotary type positive displacement	4-inch	4-inch	4-inch	3-inch
Spraybar—multiple length, shifting type	Folding	Folding	Folding	Folding

On Model RSE right and left hand spraybar valves placed directly over spraybar sumps with hot material circulated to top of valve and returned to tank. Stationary valve lever controls on spraybar platform. Bar equipped for shift and high lift. Bar extensions have automatic lift through reverse suction lever for proper drain. Folded bars cut off at pivot point in folded position. Models RSD and RJD have spraybar cut off valves on the header.



BULLETINS DESCRIBING DETAILS FURNISHED ON REQUEST

184-1-41

ROSCO WATER APPLICATOR

For Water Stabilization of Roadways

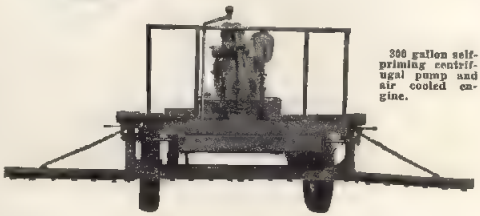
A Portable Power Pumping and Road Spraying Unit for fast and accurate distribution of water over large areas. Also suitable for drainage service and the unloading and transfer of water or various liquids and wherever a large volume of water is to be handled. A portable, balanced, quick turn-around unit, incorporating the Rosco patented folding type spraybar.

Right and left cut-off valves operate either half of spraybar.

Shut-off valve at pivot point of folding spraybar sections.

Spraybar lifted for safe ground clearance in transit and for angle spraying if desired.

Provides even distribution over full length of spraybar.



300 gallon self-priming centrifugal pump and air cooled engine.

Rosco Tractor or Truck Operated Street Flusher

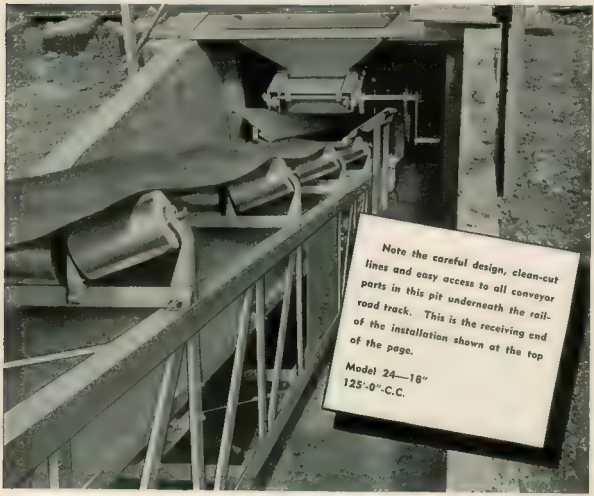
A light weight, efficient, low cost street cleaning and sprinkling unit.

For small cities, villages, townships and wherever a power pumping machine for cleaning, spraying, fire fighting or transfer of water is required.

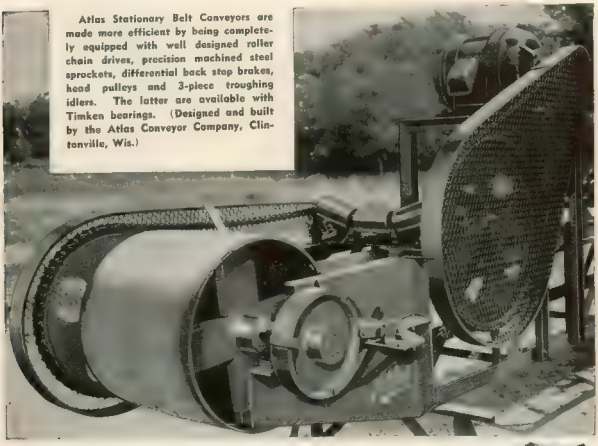
Furnished standard with 1000-gallon tank and equipped with 200-gallon centrifugal pump direct connected to air cooled engine. Two flushing nozzles and rear sprinkling nozzle controlled from driver's seat by convenient operating levers at front of unit.

Can also be furnished on skids for truck mounting.

Atlas
National Defense being built up with Atlas Stationary Belt Conveyors. James A. McKay & Son built this United States Army airfield with an Atlas Model 24—24" Belt Conveyor, 132 ft. long. This conveyor carried all the sand, gravel and stone used in the construction of the concrete runways — equivalent to 18 miles of standard highway.

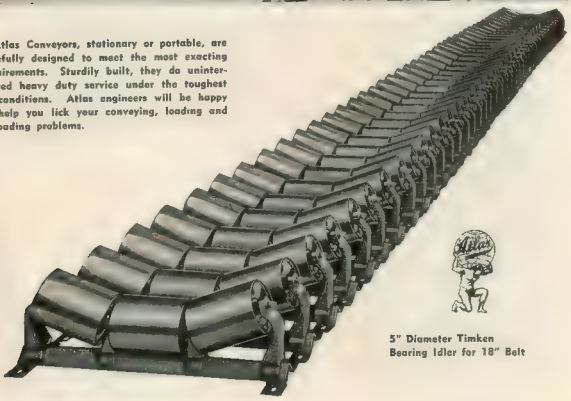

Note the careful design, clean-cut lines and easy access to all conveyor parts in this pit underneath the railroad track. This is the receiving end of the installation shown at the top of the page.
Model 24—18"
125'-0"-C.C.

Write for Catalogs and Bulletins showing Atlas Portable and Stationary Conveyors built for handling materials of all kinds.



Atlas Stationary Belt Conveyors are made more efficient by being completely equipped with well designed roller chain drives, precision machined steel sprockets, differential back stop brakes, head pulleys and 3-piece troughing idlers. The latter are available with Timken bearings. (Designed and built by the Atlas Conveyor Company, Clintonville, Wis.)

Atlas Conveyors, stationary or portable, are carefully designed to meet the most exacting requirements. Sturdily built, they do uninterrupted heavy duty service under the toughest of conditions. Atlas engineers will be happy to help you lick your conveying, loading and unloading problems.



5" Diameter Timken Bearing Idler for 18" Belt

Atlas Stationary Belt Conveyors like the one pictured on the page at the left are all completely equipped with parts such as Idlers, Roller Chain Drives, etc., shown above.

71-2-43

C. H. & E. SINGLE AND DOUBLE DIAPHRAGM AND SEWAGE AND TRASH PUMPS

All C. H. & E. diaphragm pumps incorporate the straight line water flow feature—with water box and both suction and discharge valve in a straight line—this feature causes solid materials to be swept through the pump with the flow of water. This feature also gives C. H. & E. pumps greater capacity.

Valves are of the wide opening, rubber-faced flap type, easily accessible on all models.

Diaphragms are held in place by a clamp ring and can be changed very easily in several minutes by loosening only four bolts.

A convertible open and closed discharge spout is a new standard feature. The spout is equipped with a hinged cover having a tapped connection for discharge hose or pipe. The cover can be easily swung back when an open discharge is required.

Pumps have standardized A. G. C. ratings as follows:

Size	Capacity 10' Lift	Capacity 20' Lift
Single Pumps	8,000 G. P. H.	4,000 G. P. H.
Double Pumps	12,000 G. P. H.	7,000 G. P. H.

No. 5 Single Diaphragm Pump

A low cost, 3" or 4" pump for all around work. Diaphragm is activated by eccentric forged crankshaft which is connected to power by an open direct gear drive.

Furnished only with a single cylinder 3 horsepower horizontal, hopper-cooled engine with either two- or four-wheel truck. Weight, 700 lbs.

No. 50 Single Diaphragm Pumps

The No. 50 pumps are designed for heavy work and long service, providing every diaphragm pump feature which a user might desire.

Transmission is through a direct gear reduction and sidearm crank to a rigid walking beam which activates the diaphragm plunger. All revolving parts run in roller bearings—all oscillating pins are bronze bushed. The machine-cut gears can be furnished either open or enclosed in oil bath.

Furnished in 4" size only. Suction connection is equipped with handy cleanout opening.

A variety of power units is offered from 3 to 6 horsepower. Weight, 600 to 1000 lbs.

No. 55 Double Diaphragm Pumps

Same construction as No. 50 single pumps, except with two pump units. 4" suction only with single suction manifold and suction cleanout opening on each pump.

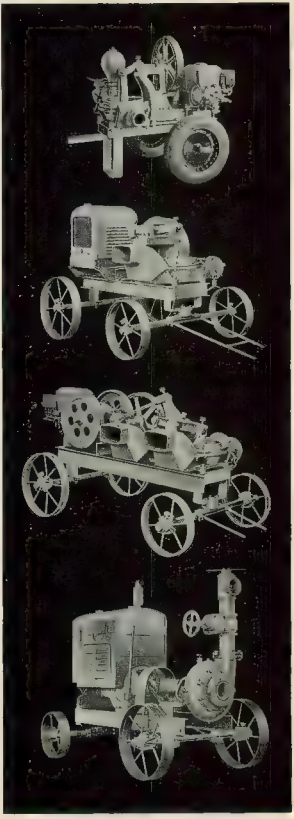
Offered with power units of all types 3 to 6 horsepower. Weights, 1000 to 1200 lbs.

Sewage and Trash Pumps

Single stage centrifugal pumps with patented impeller to handle raw sewage. These pumps will handle all types of foreign matter including stringy or fibrous material. Pumps will pass any solid up to 1" smaller in diameter than the suction of the pump. Pumps are not self-priming as they are used under conditions where the supply of water is constant. Gate valve is furnished to control flow of discharge.

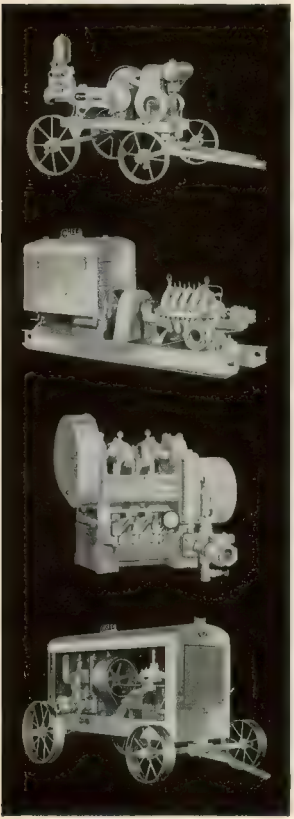
Four sizes—3" to 6"—capacity, 30,000 to 120,000 G. P. H.

Write for Bulletin DSP-41.



158-4-48

C. H. & E. PISTON PUMPS, JETTING PUMPS AND TRIPLEX ROAD PUMPS



Piston Force Pumps

A full line of piston force pumps for supplying water to mixers and similar water supply duty. Pumps are of the single cylinder, horizontal, double acting type with enclosed gears running in oil.

Pumps are driven through V-belt drive by single cylinder air-cooled gasoline engine or equivalent electric motor. Four sizes—15 to 60 G. P. M. at 100 lbs. pressure—2½ to 5 horsepower.

Furnished on skid or trailer mountings.

Multi-Stage Jetting Pumps

Large capacity, high-pressure pumps for heavy-duty jetting work. Pumps are horizontal split shell type with high efficiency bronze impellers. Alloy steel shafts fitted with bronze sleeves. Pumps are bronze fitted throughout to handle sea water as well as fresh water.

Driven through flexible couplings by gasoline engines or electric motors—mounted on welded steel skid or four-wheel truck

Three sizes—200 to 300 G. P. M.—pressures 100 to 200 lbs. Larger pumps made up on special order.

Triplex Road Pumps

All C. H. & E. Triplex pumps are of the vertical type with water box and valves at the bottom. In this type of construction all sediment and foreign material is swept through the pump without causing wear in the cylinders and plungers.

Valves are of the all-metal spring loaded type with bronze seats, stems and springs and nickel alloy steel discs.

The No. 11 series of pumps are designed for present-day high-speed production methods.

The pump frame and water box are separate castings. Stuffing boxes are cast integral with the water box.

Crankshaft is a heavy steel forging guaranteed against breakage during the life of the pump. Both crankshaft and countershaft run in roller bearings. The single gear reduction runs in an oil bath.

Plungers are of abrasion-resisting metal—connecting rods are steel with hardened pins and bronze bushings.

C. H. & E. road pumps are driven through an endless V-belt drive. This exclusive feature takes care of any slight misalignment and is absolutely noiseless and unaffected by weather. This type of drive is efficient and economical.

The No. 11 road pumps are powered by six cylinder power units—pump and engine are completely enclosed in an overall housing with removable doors—the only road pumps with this feature.

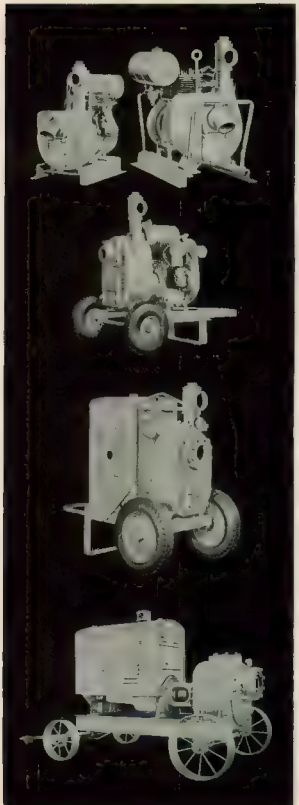
Furnished in a full range of sizes—capacities, 80 to 150 G. P. M.—pressures, 320 to 600 lbs.

The Nos. 9 and 14 pumps are 3¾"x4½" pumps for smaller capacity jobs—capacities 40 G. P. M., at pressures from 200 to 400 pounds.

Write for Bulletin FP-80.

153-5-43

C. H. & E. SELF-PRIMING CENTRIFUGAL PUMPS



A full line of highly efficient, dependable, and economical pumps. Large symmetrical pump cases with smoothly rounded water passages enable the handling of a high percentage of solids.

Swing type suction check valve is built into suction head—angle seat insures positive sealing.

Priming port is automatically shut off after pump is primed by the spring tension recirculation cut-off valve.

Impellers are of the three-vane open-trash type with a heavy shroud for added strength. Impellers are adjustable on the pump shaft so as to compensate for wear in both the pump volute and impeller without the need for wearing plates or rings.

Long life double-grease seal provides a positive seal against air entering the pump. The seal is lubricated by grease through an automatic self-feeding grease cup. The pump support casting between pump and engine is provided with a hollow chamber around the seal, which chamber is packed with grease as auxiliary lubrication.

Pumps are furnished with two handy cleanout plates—the bottom plate providing access to the priming case and cut-off valve and the top plate, to the priming port and impeller.

All pumps are furnished complete with vacuum gauge, lifting bail, discharge fittings, and suction strainer.

Pumps are offered with gasoline engine or electric motor power or without power for belt drive. Available on all types of mountings—skid, 2-wheel trailer or 4-wheel truck.

All pump capacities conform to the Associated General Contractors' standards as set up by the Pump Manufacturers' Bureau.

Light Weight Pumps

Built in two sizes—1½" and 2". Same construction as standard pumps, except alloy aluminum metal for light weight.

The No. 40DCL 1½" pump is powered by a 1 horsepower air-cooled engine, and is mounted on skid with convenient carrying handle. Capacity, 3000 G. P. H. Weight, only 59 lbs.

The No. 41CL 2" pump is powered by a 2½ horsepower air-cooled engine, and is mounted on skid with carrying handles at each end. Capacity, 7000 G. P. H. Weight, only 115 lbs.

"Light Weight Pumps cannot be furnished for duration of war."

Standard Pumps

Model	Size	Net Weight Lbs.	H. P.	A. G. C. Rating G. P. H.
No. 40	1½"	75	1	3,000
No. 41	2"	200	2½	7,000
No. 42	3"	365	4	10,000
No. 42S	3"	370	5	15,000
No. 43	3"	525	6 to 8	20,000
No. 44	4"	800	12	30,000
No. 44A	4"	1100	25	40,000
No. 46	6"	1750	45	90,000
No. 48	8"	2400	60	125,000

Write for Bulletin SPP-40.

153-3-43

C. H. & E. SINGLE AND DOUBLE DRUM BUILDERS' HOISTS CONTINUOUS TROUGH TYPE MORTAR MIXERS

No. 70 Hitchhiker Winch Head Hoist

A lightweight, compact hoist for handling light materials. Two winch heads driven through a worm drive enclosed in oil. All clutches, brakes and expensive transmission have been eliminated. The hoist is operated by snubbing a rope around either winch head—the wraps of rope acting as clutch and brake

Furnished with 4 horsepower gasoline engine. Capacity on large winch head, 400 lbs. at 115 F. P. M.—on small winch head, 600 lbs. at 75 F. P. M. Weight of complete unit, 475 lbs.

Single and Double Drum Hoists

A full line of single drum, double drum and reversible hoists, with capacities from 500 to 7000 lbs. Rigid, heavy hoist frames, with drums of semi-steel running in bronze bearings. Gears are stub tooth and machine cut. Clutches are of the single cone type with screw thrust control and asbestos lining. Large wide faced brake bands with asbestos lining. Niggerheads are standard equipment. All hoists mounted on skids.

The No. 19 single drum hoist series is furnished with gasoline engines from 5 to 15 horsepower with capacities from 500 to 1500 lbs. at 175' per minute. Direct gear and roller chain drives.

The Nos. 21, 22 and 23 hoist series are furnished with gasoline engines from 15 to 25 horsepower with capacities from 2000 to 3000 lbs. at 190' per minute. These hoists are driven through silent chain drive.

The Nos. 24 and 26 silent chain drive hoists are furnished with 40 horsepower engine with a capacity of 4000 lbs. at 250' per minute.

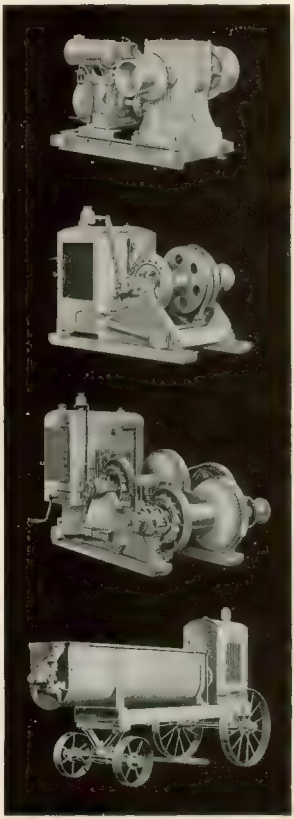
The Nos. 27 and 28 V-belt drive hoists are furnished with 65 horsepower engine with a capacity of 7000 lbs. at 220' per minute. These hoists are of all steel construction.

All single drum hoists larger than the No. 19 can be converted to double drum. All ratings are based on single line.

Continuous Trough Type Mortar Mixers

C. H. & E. Mortar Mixers are of the continuous mix type. Paddles are perforated to insure a smooth mix and pitched to carry the mix to the discharge door which is wheelbarrow height. There is no time out needed to change batches—materials are placed in one end of the trough and the completed mix flows from the other end without interruption. Primary gear reduction is enclosed running in oil—secondary reduction is enclosed in a metal housing adequately sealed against the mortar.

Furnished with 5 or 8 horsepower engines, maximum capacity, 10 cubic feet—average working batch 7 to 8 cubic feet.



Send for Bulletin HMM42.

OLYMPIC *watches*

FOR MEN

TIMED AND CASED IN U. S. A.

Scientifically built, OLYMPIC watches are true companions for the men in our armed forces because of their sturdiness and dependability. They are manufactured by one of the foremost factories in the world where high grade watchmaking has been the tradition for exactly a century.

All illustrations slightly reduced

(A) G150—COLONEL
17 Jewels, 10K Yellow Gold Filled

LIST **$44.50**

Superbly tailored lines, 10K yellow gold filled case hand lapped with modern gray dial, white figures, 17 jewel quality Olympic movement, fine leather strap, beautiful gift box.

(B) G151—MAJOR
17 Jewels, 10K Rose Gold Filled

LIST **$44.50**

Beautiful style, exclusive model, highly lapped finish, flexible end to fit the wrist snugly, 17 jewel quality Olympic movement, 10K rose gold filled case, detachable fine pigskin strap, rich gift box.

(C) G152—AUTOMATIC
17 Jewels, Automatic, Self-Winding, Moisture and Dustproof, Center Second

LIST **$56.00**

The ideal watch for the armed forces, automatic, moisture and dustproof, shockproof, with CENTER SECOND, luminous dial, 17 jewel quality movement, plain but smart stainless white metal case, fine leather strap, rich gift box.

(D) G153—CAPTAIN
17 Jewels, 10K Yellow Rolled Gold Plate

LIST **$34.50**

Streamlined model, 10K yellow rolled gold plate case, rose colored dial, white figures, 17 jewel quality Olympic movement, fine leather strap, rich gift box.

(E) G154—GOLF
17 Jewels, 10K Yellow Rolled Gold Plate

LIST **$34.50**

Popular curved rectangular shape, 10K yellow rolled gold plate case, 17 jewel quality Olympic movement, smart dial to match, fine leather strap with gift box.

(F) G155—CLUB
17 Jewels, 10K Yellow Rolled Gold Plate

LIST **$36.50**

Another well liked streamlined model, 10K yellow rolled gold plate case, steel back, 17 jewel quality Olympic movement, a handsome link bracelet to match, with gift box.

G156—MEDICAL
10K Yellow Rolled Gold Plate, Sweep Second

LIST **$29.00**

Olympic 7 jewels, in 10K yellow rolled gold plate case, SWEEP SECOND HAND, white enamel dial, detachable leather strap, fine gift box.

G157—PILOT
17 Jewels, 10K Yellow Rolled Gold Plate

LIST **$27.50**

Military design, 10K yellow rolled gold plate case, 17 jewel quality Olympic movement, luminous figured dial and hands, detachable leather strap, gift box.

G158 RACER
Same but with 7 jewel movement

LIST **$21.00**

G161—CARLTON
7 Jewels, 10K Yellow Rolled Gold Plate

LIST **$19.50**

A handsome curved model, 10K yellow rolled gold plate case, steel back, 7 jewel Olympic movement, smart white gilt figure dial to match, detachable strap, gift box.

G159—WINNER
17 Jewels, 10K Yellow Rolled Gold Plate

LIST **$30.00**

A serviceable style, 10K yellow rolled gold plate case, 17 jewel quality Olympic movement, easy readable dial, detachable leather strap, gift box.

G160—POLO
Same but with 7 jewel movement

LIST **$23.50**

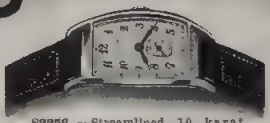
G162—LEADER
7 Jewels, 10K Yellow Rolled Gold Plate

LIST **$19.50**

Sporty model, 10K yellow rolled gold plate case, steel back, 7 jewel Olympic movement, detachable leather strap, gift box.

ESTABLISHED
1874

SCHWOB watches



S2256 — Streamlined 10 karat Rolled Gold Plate, Stainless Steel Back, 7 jewel Schwob, Fine Leather Strap **$20.00**

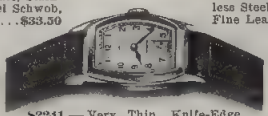
The distinctive and outstanding craftsmanship of SCHWOB is portrayed by the timepieces presented on this page. It is the SCHWOB policy to guarantee you a truly accurate watch of sturdy construction that will stand years of hard wear.

S2244 — Handsome, Neat Design in 10 karat Rolled Gold Plate, Stainless Steel Back, 7 jewel Schwob, Fine Leather Strap. **$26.50**

S2240—Distinctive, Modern Model in 10 karat Rolled Gold Plate, Stainless Steel Back, 17 jewel Schwob, Fine Leather Strap. **$35.00**

S2253 — Beautifully Tailored in 10 karat Rolled Gold Plate, Stainless Steel Back, 17 jewel Schwob, Fine Leather Strap..... **$33.50**

S2240—Attractive New Design in 10 karat Rolled Gold Plate, Stainless Steel Back, 17 jewel Schwob, Fine Leather Strap. . **$35.00**



S2241 — Very Thin, Knife-Edge Style, 10 karat Rolled Gold Plate, Stainless Steel Back, 7 jewel Schwob, Fine Leather Strap. **$25.00**

S2250—Smart, Very Thin, Knife-Edge in 10 karat Rolled Gold Plate, Stainless Steel Back, 7 jewel Schwob, Fine Leather Strap. **$25.00**

S2243—Reliable and Sturdy, 10 karat Rolled Gold Plate, Stainless Steel Back, 7 jewel Schwob, Fine Leather Strap **$21.50**

S2254—New, Very Thin, Knife-Edge in 10 karat Rolled Gold Plate, Stainless Steel Back, 7 jewel Schwob, Fine Leather Strap. **$25.00**

ALL WATCHES SLIGHTLY REDUCED IN SIZE

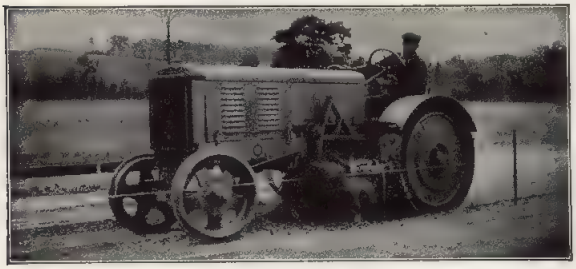
EACH WATCH FURNISHED WITH BEAUTIFUL GIFT BOX

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

RIGHT WITH THE SUN

THE CLEVELAND FORMGRADER

Precision Accuracy . . . Minimum Cost



CUT YOUR FORM TRENCH BY MACHINE

With a Cleveland Formgrader, you cut your form trench with a revolving cutter. This cutter is adjustable up and down by the operator who rides on the machine. This revolving cutter prepares a trench 18 inches wide which gives ample room for properly setting the widest base forms.

A gauge at the side bears against the grade line with a hair-spring pressure. The cutter blades cut exactly 24 inches below the mark on this gauge. The operator simply sees that this mark is kept on the line. The machine does the rest. The trench so cut must be accurate. The cutter gauge is always kept level by a pendulum controlled shaft, so that the form trench is always precisely correct, regardless of the surface of the ground.

A safety clutch disengages the cutter automatically in case the blades hit a buried stone or other obstruction, and thus prevents breakage or damage to any parts.

A wheel with a 12-inch tread, and with a heavy counterweight on it for extra weight follows immediately behind the cutter and leaves the form trench rolled and ready for placing the forms.

One operator and a Cleveland Formgrader will cut all your form trench much more accurately and a great deal faster than you can do it by hand.

SPECIFICATIONS

Power—Hercules 6-Cylinder Model JXC Motor—3¾" bore by 4½" stroke. Displacement, 282 cubic inches. H. P., 45 N. A. C. C. Rating. Speed, 1500 R. P. M.

Transmission—Warner 4-Speed.

Clutch—Borg & Beck.

Radiator—Cast tank—maximum cooling, with hinged cap and screen guard.

Fan—18" diameter.

Air Cleaner—Pomona.

Cutting Speeds—9½ and 19 feet per minute for normal operation. Other speeds of 2½ and 5 feet per minute available for extra hard cutting.

Form Trench—Cuts 18" wide trench.

Travel Speeds—100, 170, 314 feet per minute.

Cutter Bar Speeds—70 to 117 R. P. M.

Weight—6300 pounds.

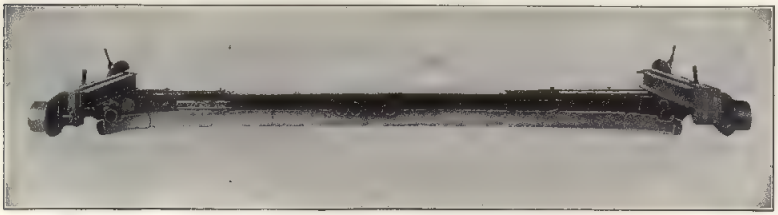
375-1-43

CLEVELAND HEAVY DUTY TRAILGRADER

Built for the Contractor Who Wants the Best!

Transportation Wheels mounted on a crank axle are standard equipment with the Cleveland Heavy Duty Trailgrader.

The Cleveland Heavy Duty Trailgrader is simple and rugged in construction. Its purpose is to finish the subgrade to exact contour just before concrete is placed. It incorporates many features which experience has proved to be necessary in a machine of this type for efficient, economical and lasting service.



The frame is made from a heavy H-beam and ship channels. The weight of the machine complete is approximately 3,500 pounds.

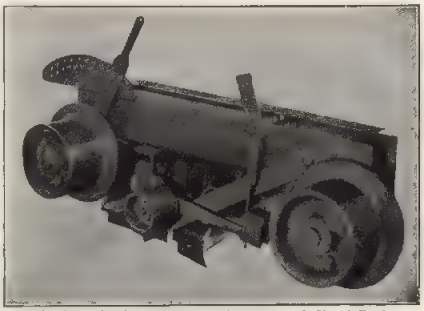
Blades are dished type, made from high carbon steel heat treated for maximum wear and cutting ability. The double cutting edge feature reduces replacements.

Vertical adjustment is provided at each side truck so that proper clearance for the mixer bucket over the Trailgrader can be obtained regardless of the height of the side forms. This feature is important to the contractor doing work in various states under different specifications.

Cleveland Trailgraders are adjustable by 6-inch intervals from 18 to 20 feet, inclusive. Sizes for half width construction or other special widths are available.

Adjustable Draw Bars are provided for a rigid connection to the paver. These are furnished as standard equipment and are made to fit the various models of pavers.

An exclusive feature is the automatic, visible signal device on each side truck that gives warning immediately the wheels raise off the surface a fraction of an inch, thus notifying when the machine is not cutting down to exact grade. This signal gives added assurance against thin spots in the pavement.



End View, showing Working Adjustment and Signal Device.

375-2-38

THE CLEVELAND "JUNIOR" TRAILGRADER

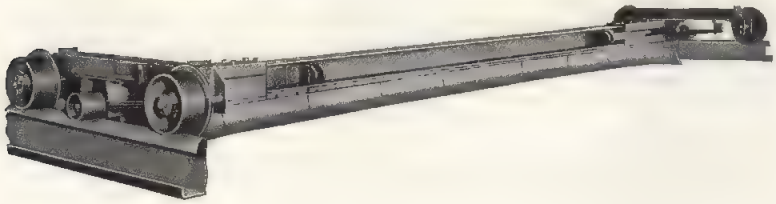
The Cleveland Junior Trailgrader embodies many of the features of the Cleveland Heavy Duty Trailgrader described on the preceding pages.

It is adjustable in width and also for various crowns and thickness of slabs.

It is also equipped with the exclusive Cleveland feature of the automatic signal device that warns when the blades are not cutting down to grade. This insures accuracy of subgrade.

Exclusive with Cleveland Trailgraders is the automatic warning signal that notifies if the blades are not cutting down to grade.

The frame is made of heavy H-column which gives strength and rigidity. On the under side of this H-column is fastened a heavy angle to one face of which the cutting blades are mounted with bolts through slotted holes. This allows the blades to be set for crown and also to be moved vertically for fine adjustment of depth of cut. Side trucks are made of ship channel. The wheels are extra heavy with deep flanges and run on oversize axles. A grease reservoir in each wheel insures ample lubrication.



Blades are of high carbon steel, heat treated, single edged, and mounted in sections to permit easy adjustment for crown.

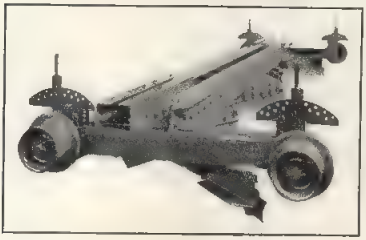
Quick and easy vertical adjustments of the wheels on the side trucks is accomplished by a series of holes in the bearing brackets which carry the axles.

The total weight of the machine is approximately 1,650 pounds. It is furnished complete with adjustable drawbars for connecting it to the paver. Transportation wheels are not furnished as standard equipment, but may be had at slight additional cost.

There is nothing cheap or flimsy about the construction of the Cleveland Junior Trailgrader. It is sturdily built, and represents tremendous value for the price.

Blades are High Carbon Steel, heat treated.

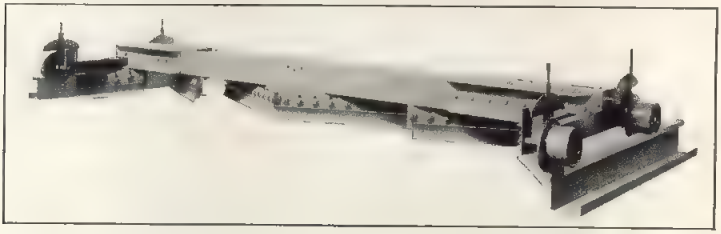
CLEVELAND PUSH PLANER



A fine grading machine pushed by the Paver under the loading skip and with cutting blades arranged diagonally to pass earth in windrows on each side of Paver.

Sufficient weight to assure accuracy in final grade and heavy enough to be used as a Subgrader. Frame designed amply high to allow clearance for surplus earth. Weight of 20 to 22-foot machine—4,500 pounds.

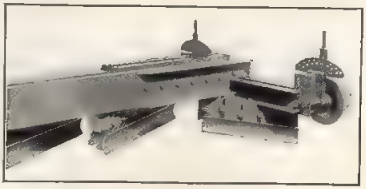
Made in combination adjustable widths. Furnished with or without Transportation Wheels. Adjustable Push Bars standard equipment on all machines. Attachments and Pulling Cables for use as Subgrader can be furnished.



Double Cutting Edge Dished shape blades furnished for longer life. Form Wheels have machined treads to assure even cut on subgrade and are provided with large grease reservoir and Alemite fittings.

Side Trucks adjustable vertically for depth of cut below Forms. Adjustable Eccentric Axles on all four Form Wheels for fine adjustment in variable soil cutting conditions.

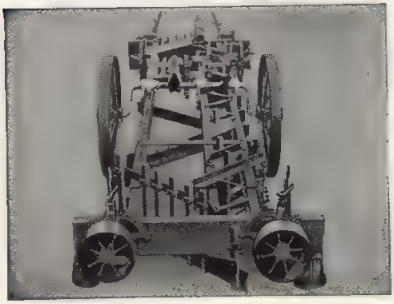
Cutting Blade Adjustment for Crown changes is provided by mounting blades on vertically adjustable standards attached to main frame. Only the Cleveland Push Planer has all these adjustable features which are absolutely necessary.



In ordering, give width of road, cross section, name, size and make of Paver. This information with order will permit us to properly ship machine ready for use and will save delays in shipment.

THE CLEVELAND SUBGRADE SCRAPER

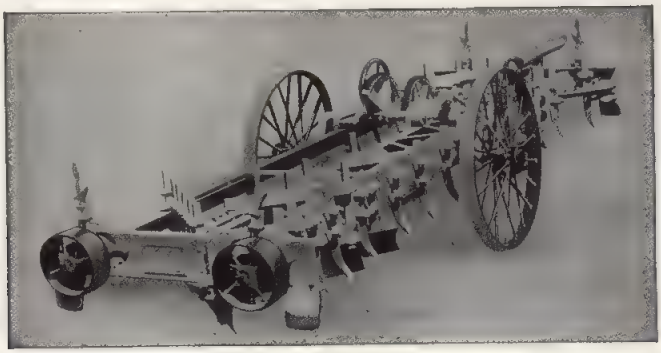
SAVES MONEY ON FINE GRADING



The Subgrade Scraper is made in adjustable widths of 9 to 12 feet, 15 to 20 feet, 18 to 22 feet, and larger sizes built to order.

Hand levers operating over notched quadrants control the working adjustments. Stops are provided in the quadrants which can be set to prevent the blades from cutting too deep. The Subgrade Scraper will plane the grade to exact depth and no more.

It's easier to adjust blades to crown because they are carried on upright standards, firmly anchored to the frame. The standards can be quickly loosened to permit moving them up or down to adjust crown when necessary.



Bronze bushings in the rollers which carry the machine on the side forms make costly replacements unnecessary. In case of wear, you replace the bushings, not the wheels.

An improved jack wheel lift with two hand wheels is an important feature of the Subgrade Scraper. There is a positive locking device on each hand wheel, insuring against it coming unfastened accidentally, and adding to the safety of operation.

Transportation jack wheels with an 8-inch hub, and with big oversize roller bearings adequately protected against dirt insure against bearing trouble when the Subgrade Scraper is hauled from one job to another. Further evidence of how this machine is designed to cut down trouble and repair bills.

375-5-39

CLEVELAND ROOTERS

Standard Seven Tooth Rooter

This rooter does the work of a rooter plow but does work faster and better because it has seven teeth, roots 48 inches wide and to maximum depth of 12 inches. Built to stand heaviest pull, yet light enough to be easily handled with small tractors.

Specifications

Frame—Heavy 1-inch by 5-inch bars, all electric welded construction.

Teeth—Seven Double Pointed. Made from high Carbon Steel, forged and heat treated.

Maximum Depth of Cut—12 inches.

Width of Cut—48 inches.

Wheels—24-inch diameter. Hub Caps and Dust Bands to protect against dirt.

Weight—1350 pounds.

Heavy Seven Tooth Rooter

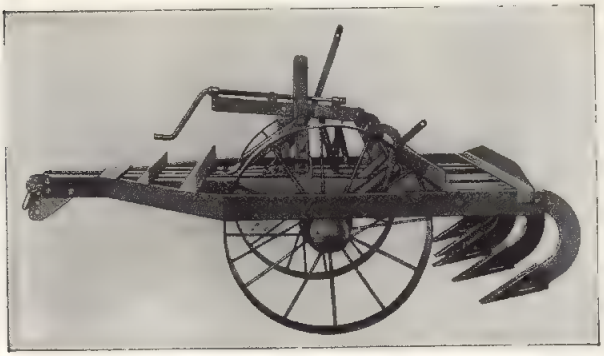
In cases where a Rooter weighing 1800 lbs. is needed for tough digging and weight will help dig in, this Rooter is built to fill the need.

The general construction is the same as Standard Seven-Tooth Rooter but Heavy Cast Disc Wheels are provided to give the desired weight.

Wheels—24-inch diameter. Hub Caps and Dust Bands, insuring long wear.

CLEVELAND RIPPERS

Cleveland has a Ripper for every need. Frames are all welded construction. Machines are equipped with five Removable Tooth Standards with self sharpening replaceable alloy steel points. Manually controlled with control ropes or cables, suitably connected to two separate levers, one for lowering, and the other for lifting rippers to and from working position, and pulling lever again to remove ripper from working position. Controlled by Tractor Operator from platform of tractor.



Specifications

Catalog Number	Point Spacing	Maximum Depth	Wheel Bearings	Normal Power	Standards	Weight
20	12″	12″	Roller	30-35 HP	1½″ x 4″	2200 lbs.
30	12″	12″	Roller	35-45 HP	1½″ x 6″	3150 lbs
40	12″	12″	Roller	40-60 HP	1½″ x 6″	4200 lbs.
60	14½″	15″	Roller	60-75 HP	2″ x 9″	6190 lbs.

A
B
C
D
E

Effanbee dolls ... always finest quality

(A) EFFANBEE SWEETIE PIE. Big Gorgeous eyes move from side to side, she cries and goes to sleep. Hair is real cotton fur never mats or tangles. Composition head, arms, legs. Body is cuddly soft cotton. Her clothes. Dress is dotted swiss with petticoat to match. Sash tied behind in huge bow. Matching bonnet. Lace trimmed sun suit, white panty, white socks, shoes.
48 T 2474 [illegible] Ship wt 2 lbs 4 oz. $9.25

(B) EFFANBEE BABY IN SNOWSUIT AND HELMET of cotton chintz. Underclothing, shoes, socks, helmet, snowsuit, trimmed with white fur. Sleeping eyes, real lashes. Composition head, arms, legs. Head trims with socks & shoes.
48 T 2471 [illegible] Ship wt 6 lbs 1 oz. $12.95
48 T 2472 [illegible] Ship wt 4 lbs 8.98

(C) EFFANBEE DOLL IN SHEER BLACK MARQUISETTE negligee, grown-up bra and accessories panties. Black grosgrain shoes have tiny heels. She has a satin lovely fashion figure. All composition body jointed at shoulders and hips. Life like hands with tiny separate fingers. Turning, tilting composition head. The human hair. Sleeping Glassene eyes, real lashes.
48 T 2403 18 in. all. Ship wt 2 lbs 4 oz. $6.75

(D) (E) EFFANBEE GIRL DOLLS wear flower trimmed pique dresses with button closings, matching panties, rayon socks, organdy trimmed composition bodies, legs with jointed arms, legs turning, tilting heads. Fine human hair. Sleeping Glassene eyes, real lashes.
(D) 48 T 2456 [illegible] Ship wt 4 lbs. $8.45
(E) 48 T 2557 18 in. tall. Ship wt 3 lbs 6.25

SEE SIDE TO READ FACTS ABOUT DOLLS ON PAGE 70

...lifelike because modelled from real children

(F G) EFFANBEE SOLDIER AND SAILOR DOLLS. Heads, arms, legs are hard-to-break composition. Bodies are cotton stuffed. Turning head. Hair is molded on and painted. Hand painted eyes. Jointed arms and legs. Shoes are molded on and painted. Sailor dressed in cotton twill underarm jacket and socks are part of legs. Soldier dressed in cotton twill uniform jacket, long trousers, garrison cap, shirt. Sailor dressed in cotton twill blouse, bow trousers, dickey, neckerchief, white sailor hat.

F, 48 T 2380 Sailor Doll, 14 in. tall. Ship. wt. 2 lbs. 2 oz. $2.29
(G) 48 T 2381 Soldier Doll. 14 in. tall. Ship. wt. 2 lbs. 2 oz. 2.29

(H J) EFFANBEE GIRL DOLLS WEAR BOLERO JACKET DRESSES of checked cotton broadcloth with button on sport or ruffled collars. Jaunty quality as children may be seen dressed, matching panties. White socks, slippers. Shiny hair. All composition arms and hands are beautifully sculptured. Eyes human hair wig, curled bangs. Turning head, jointed arms, legs. Sleeping eyes, real lashes. Read Facts About Dolls. Page 70.

(H) 48 T 2404 21 inches tall. Ship. wt. 4 lbs. $8.25
(J 48 T 2405 18 inches tall. Ship. wt. 2 lbs. 15 oz. 5.95

(K) EFFANBEE BABY IN MARQUISETTE. She cries and goes to sleep like a real baby. Head, chubby arms and legs are composition. Body is stuffed with soft cotton. Hair is molded and painted on head. Head turns. Sleeping glassene eyes with real lashes. Dress and bonnet are exquisitely made of shadow sheer rayon Marquisette with lace frills ruffled collar, ties behind with big sash. Rayon bow. Dress buttons in back. Pink lace trimmed slip and white panties. White rayon socks, white baby shoes. Read Facts About Dolls on Page 70.
48 T 2375 13 inches tall. Ship. wt. 2 lbs. $6.45

(L) EFFANBEE'S MARGUERITE wears red twill skirt lined with white. Attached blouse and panties are white cotton twill. Gold braid, brass buttons, "gold" epaulets. Carries wood baton. High hat with chin strap and ostrich feather. Mohair tress is very realistic. Exquisitely modeled head. Sculptured arms and hands. Turning head, jointed arms, legs. Glassene sleeping eyes, real lashes. Fine human hair. Read Facts About Dolls" on Page 70.
Ship. wt. 2 lbs. 15 oz.
48 T 2407 18 inches tall. $6.98

Effanbee's new brother and sister set

EFFANBEE makers of the world's finest dolls . . . create a "Masterpiece Doll" each Christmas. This year it's a cunning Brother and Sister Set in the unusual gift package shown at left. Little Sister is a chubby mite . . . 12 inches tall . . . weighs only 7 ounces. Brother is 16 inches t[all] . . . weighs 12 ounces. They're featherweight and perfectly sized for even the tiniest [arms]. Bodies, arms and legs are stuffed with soft cotton. Heads and hands are finest composition. Hands have tiny separate fingers. Heads turn. Eyes and lashes hand painted. Bangle, wigs of soft wool and rayon yarn. Beautifully dressed . . . clothes made as well as a child's. Little Sister wears Pink cotton broadcloth dress with tiny ruffled collar, button closings, matching panties. Brother dressed in Blue cotton broadcloth overalls and checked blouse. Both wear White socks and shoes. Read "Facts about Dolls" on Page 70.

48 T 15 – Brother and Sister Doll Set. Ship. wt. 3 lbs. $5.95

CONVENIENT CREDIT FOR CHRISTMAS SHOPPERS . . . SEE PAGE 109

Effanbee's "Sweetie Pie" in two sizes

So life-like . . . almost like a real baby. Her flirting eyes move from side to side and she cries and goes to sleep. Close-cropped "Tousle-Tot" hair . . . never mats or tangles . . . is real *lambskin* and can be shampooed. Soft body stuffed with cotton. Arms, legs and head are beautifully modeled composition. Head turns. Life-like Glassene eyes go to sleep . . . real lashes. Exquisitely made dress and bonnet of sheer rayon marquisette and organdy with lace frills, embroidered rosebuds. Dress buttons in back, sash ties behind in big bow. Lace trimmed slip and panties. White socks; suit soled baby shoes. Sweetie Pie is made by EFFANBEE . . . manufacturers of the finest dolls in the world. Comes in two sizes. Sent to you in the beautiful gift box shown at right. Read "Facts about Dolls" on Page 70.

48 T 2371—24-Inch "Sweetie Pie" Baby Doll. Ship. wt. 5 lbs. 10 oz. $14.85

48 T 2370—19-Inch "Sweetie Pie" Baby Doll. Ship. wt. 3 lbs. 3 oz. 11.39

SEE PAGE 109 FOR WARDS TIME PAYMENT PLAN

Good quality, popular priced dolls

A CRIES MAMA PAPA. FLIRTS WITH YOU. Glassene sleeping eyes move from side to side. She cries Ma-ma and Da-da just like a real baby. A big armful . 23 inches tall. Baby ringlets molded on and painted. Hard to break composition head, arms and legs. Soft body stuffed with rattan. She's dressed like more expensive dolls in Pink Rayon Baby Coat with lace edged cape collar. Matching ruffled bonnet. White organdy dress trimmed with embroidery and ribbon. Lace trimmed organdy slip, pink knit panties, white rayon socks, white shoes with real heels.
48 T 2411 23 inch Baby Doll Ship. wt. 4 lbs. $5.25

B 15-INCH HORSMAN BABY DOLL. She cries and goes to sleep. Hair molded and painted on. Metal sleeping eyes; real lashes. Head, arms and legs are composition. Body stuffed with cotton. Pink organdy dress embroidered and trimmed with lace. Matching bonnet . . . ruffled net brim. White cotton slip, knit panty, rayon socks, white booties.
48 T 2333—15-Inch Baby Doll. Ship. wt. 2 lbs. $1.98

C DOLL WITH BRAIDS. All composition. Head turns and tilts. Jointed arms, legs. Medium quality mohair pigtails. Sleeping Glassene eyes, real lashes. Blue pique suspender skirt over white blouse. undy, socks, slippers.
48 T 2412—15-In. Girl Doll. Ship. wt. 2 lbs.. ....$2.19

D DOLL IN ORGANDY. Wears dainty Yellow tea apron over sheer Brown organdy dress, lace trimmed organdy undy. White socks, black slippers with real heels. All composition. Head turns, tilts. Jointed arms, legs. Medium quality mohair ringlet wig. Glassene sleeping eyes; real lashes.
48 T 2416—16-in. Doll. Ship. wt. 2 lbs. 4 oz..... .. $3.25

E DOLL IN RED VELVETEEN. All composition. Head turns, tilts. Jointed arms, legs. Medium quality mohair ringlets. Glassene sleeping eyes; real lashes. Red velveteen suspender skirt over white cotton blouse. Snap fasteners. Matching bonnet. Cotton undy. White socks, black slippers.
48 T 2419—19½-in. Doll. Ship. wt. 3 lbs. 12 oz. $4.45

F 11 PC. LAYETTE FOR DY-DEE DOLLS—CLOTHES IN 3 SIZES. Shown below and at left. Dainty layettes made by Effanbee for Dy Dee Dolls, but suitable for any rubber or composition baby doll. Long lace-trimmed white batiste dress and bonnet, cotton slip, mercerized cotton shirt and Birdseye diaper. Striped cotton pajamas, cotton flannel bathrobe with hood. Fleecy cotton flannel blanket, washcloth, cotton and Q-tips. Packed in cardboard box shown below.
48 T 2535 For 20-in Doll. Ship. wt 3 lbs. 0 oz. $4.29
48 T 2534—For 15-in. Doll. Ship. wt 2 lbs. 8 oz. 3.25
48 T 2533—For 11-in. Doll. Ship. wt. 1 lb. 12 oz. . 2.19

F 11-Pc. LAYETTE

Effanbee baby dolls with wardrobes

A EFFANBEE TWINS IN TRUNK TYPE CASE. Cunning twins boy and girl dolls, completely outfitted, and with extra clothing, all neatly packed in a sturdy fiberboard case. Dressed in Beige snowsuits of soft rayon twill with contrasting collars, cuffs. Cleverly styled matching bonnet and cap. Coats fasten with cloth buttons; ski pants button at ankles and waist. Underneath they wear white cotton broadcloth rompers white rayon socks, brown artificial leather shoes.

Twins are 14 in. tall with composition arms, legs and heads. Hair is fine mohair sewed on cloth foundation, combed in baby ringlets. Cloth bodies stuffed with soft cotton. Heads turn and tilt. Sleeping Glassene eyes; real lashes. Extra playsuits of cotton broadcloth inside lid of case . . pink panty and dress for the girl, blue and white suit for the boy.

49 T 2378 Twin Dolls Ship. wt. 5 lbs. 14 oz. $15.50

B EFFANBEE COLONIAL DOLL. 12 inches tall—small jewel-like doll. Daintily made . . . all composition with tilting head, jointed arms and legs, carefully hand painted eyes and lashes. Fine quality Mohair curls sweep to her shoulders. Dainty hat of rayon and lace. Blue colonial dress of flowered rayon over pink skirt with lace trim. Lace trimmed pantalettes. Sandals and stockings. Ship. wt. 2 lbs. 4 oz.

48 T 2401—Effanbee Colonial Doll. $3.69

C DY-DEE DOLL AND 20-PC. LAYETTE. The last of our Effanbee Dy-Dee dolls for the duration . . . these dolls were made before the war. We hope our stock is large enough to enable us to fill all orders received but would suggest ordering early because we can't get any more after our present stock is sold

Dy-Dee drinks from her bottle . . . wets her diaper like a real baby. Wash her . . . powder her . . . with her blow soap bubbles through her bubble pipe. Soft ears to wash behind and tiny nostrils to clean with a swab. Shampoo her hair too. It's thick, soft genuine lambskin, fastened with waterproof adhesive

Dy-Dee is 20 inches tall. Molded of finest rubber. Hard rubber head turns, tilts. Jointed arms and legs. Glassene sleeping eyes, real lashes. Only Dy-Dee can go to sleep sitting up—keep her eyes open lying down. Finest quality . . . she's made by Effanbee.

Doll, and 20 Piece Layette packed in hinged case with handle and snaps. Dy-Dee wears Birds-eye diaper and cotton flannel jacket. Extra clothes consist of: Blue and White cotton bonnet and dress with real buttons and buttonholes. White slip; rayon socks, white shoes. Cotton flannel bathrobe, striped pajamas with drop seat. Extra diaper, shirt. Rubber panties, cotton blanket. Talcum, soap, cotton, swabs, nursing bottle, bubble pipe, spoon Ship. wt. 11 lbs.

48 T 2532M—Dy Dee and 20-Pc. Layette in Case $21 00

ORDER EARLY . . . USE YOUR CREDIT . . . SEE PAGE 109 FOR TERMS

Facts about dolls

What Makes One Doll Cost More Than Another? You can pay as little as 45c for a doll at Wards or you can pay as much as $24.50. Frequently a small doll costs more than a large one. The difference is not in size, but in quality - quality of material and workmanship and finishing . . . quality of eyes, hair and clothing.

What Are Dolls Made Of? Most doll parts are made of composition. Parts vary in quality to some extent with ingredients, but principally in the length of time taken to make and finish them. Effanbee doll parts are made more slowly and carefully than others. This makes them less fragile. They are hand finished with several coats of enamel to look and feel like real skin. Effanbee doll hands are beautifully modeled, with separate fingers, tiny palm markings, tinted nails. On less carefully made dolls the parts are rough and coarse, and the fingers are not separated.

What About Wigs? Some fine quality dolls have molded and painted hair. Some very inexpensive dolls have real hair. Wigs are usually made of human hair or mohair. They may be coarse and skimped, or fine and silky. A good mohair wig is more desirable and costs more than a poor quality human hair wig. Effanbee's "Tousle Tot" wig is genuine lambskin fur, never mats or tangles, can be cleaned with a damp cloth. All Wards doll wigs, whether mohair or human hair, are firmly sewed to a cloth foundation . . . never just pasted on the head.

What About Eyes? Sleeping eyes are of two types. The best, most lifelike are Glassene, celluloid iris over steel base. Second quality, painted on metal, do not have the sparkle of Glassene eyes. Most Effanbee dolls have Glassene eyes. Painted eyes, usually found on inexpensive dolls, are sometimes used with great artistry on fine quality dolls.

What About Clothes? On fine dolls the fabrics are the best . . . cut, fitted and finished like children's clothes. Material is not skimped. Dresses have button or snap closings. Clothes on cheaper dolls are poorer fabrics, simply sewn, casually fitted, with pin closings. Effanbee dolls wear clothes of fine materials, carefully made and fitted.

What Are Effanbee Dolls? Effanbee dolls are the finest dolls made. They have the finest workmanship and finishing, finest eyes, hair and clothing. All are attractively gift boxed. The name Effanbee is your assurance of quality.

FIVE OF THE BEST MADE DOLLS IN THE WORLD

Effanbee dolls shown on opposite page

(A) Effanbee Doll in Party Dress of glistening blue rayon taffeta, embroidered with delicate pink and blue flowers. Long, very full skirt with net ruffle. Fitted bodice has puffed sleeves. She wears long blue rayon slip, lace-trimmed panties, white rayon socks "gold" sandals with tiny heels. Body is made entirely of hard-to-break composition . . . beautifully formed. Life-like hands have tiny separate fingers. Jointed arms and legs. Turning, tilting head. Glassene sleeping eyes with real lashes. Fine human hair. Ship. wt. 3 lbs. 5 oz.
48 T 2389—18 inches tall. . . $3.98

(B) Lovely Effanbee Bride makes a charming centerpiece at wedding breakfast or bridal shower . . . or becomes the treasured possession of the child who owns her. Bridal Gown is white slipper satin; fastens with tiny pearl buttons. Net veil on satin bridal cap, embroidered with tiny seed pearls. Long white slip; lace-trimmed panties; white hose; sandals with real heels. All composition . . . beautifully modeled. Jointed arms and legs. Turning, tilting head. Exquisite hands. Fine human hair. Glassene sleeping eyes; real lashes. Ship. wt. 3 lbs. 8 oz.
48 X 2386—18 inches tall. . $11.79

(C) Effanbee Doll in Plaid Formal. Full, swirling skirt of crisp taffeta in gorgeous colorful plaid. Fitted bodice has ruffled puff sleeves, gathered with taffeta sash. She wears long red rayon ruffled slip. Lace-trimmed white rayon panties. White rayon hose; "gold" sandals with tiny heels. All composition . . . beautifully sculptured. Jointed arms and legs. Life-like hands have tiny separate fingers, tinted nails. Turning, tilting composition head. Fine quality human hair. Glassene sleeping eyes with real lashes. Ship. wt. 3 lbs. 5 oz.
48 T 2391 -18 inches tall. . . .$5.98

(D) Effanbee Doll in Three Sizes . . . the largest is a gorgeous doll to offer as a Contest Prize. Formal dress has bouffant rayon taffeta skirt with glistening metallic dots. Flared peplum of black velveteen. Pink rayon slip, lace trimmed panties, long rayon hose, "gold" sandals. Made entirely of hard-to-break composition . . . beautifully sculptured. Exquisite hands, individual slender fingers. Jointed arms and legs. Fine human hair. Turning, tilting head. Sleeping Glassene eyes; real lashes.
48 T 2368M —27 in. tall. Ship. wt. 7 lbs. 8 oz. . .$24.50
48 T 2398 —21½ in. tall. Ship. wt. 4 lbs. 14 oz . . 14.75
48 T 2399 —18 in. tall. Ship. wt. 3 lbs. 5 oz. . . . 9.98

(E) Effanbee's "Little Lady" Her long, filmy party dress has ruffled skirt of white net, embroidered with flowers; white satin bodice, big puff sleeves gathered with tiny floral bouquets. Billowy underskirt of crisp Pink taffeta. She wears lace-trimmed panties; white rayon socks; "gold" sandals with tiny heels. She has a lovely, slender figure . . . made entirely of hard to-break composition . . . perfectly sculptured. Beautiful hands have tiny separate fingers, tinted nails. Jointed arms and legs. Turning, tilting head. Sleeping Glassene eyes with real lashes. Fine human hair.
48 T 2368—20½ in. tall. Ship. wt. 3 lbs. 13 oz. $8.98

EFFANBEE DOLLS LISTED ABOVE ARE PACKED IN GIFT BOX SHOWN ON PAGE 75
FOR TIME PAYMENTS SEE PAGE 109

The K-Series MOBIL-AIR has a UNIFIED POWER PLANT

With a NEW Two-Stage Air-Cooled Compressor

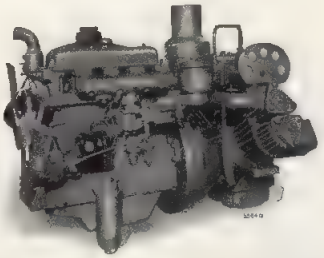
The original Two-Stage Air-Cooled Portable Compressor—pioneered by Ingersoll-Rand in 1933—was so radically different that it changed the whole trend in the portable industry.

The MOBIL-AIR uses an advanced design of two-stage air-cooled compressor. It requires less fuel and less lubricating oil. It results in less carbonization . . . less time out for inspection and repairs . . . less maintenance cost . . . and above all, greater reliability and longer life.

More efficient valving with the durable Channel Valve, and larger streamlined air passages throughout all cylinder heads, manifolds and intercooler, make tremendous reductions in air friction losses. Accuracy in machining and alignment, and perfection of wearing surfaces are unsurpassed.

Unified Air-Power Plant

Permanent alignment of engine and compressor, eliminating many common operating difficulties, is



assured by joining the two units into a rigid, self-supporting and unified assembly. It is not affected by chassis deflection. It means less wear and longer life.

. . . and the New DRILL-MORE Multi-Speed REGULATOR

This new and patented regulator adjusts the engine speed to the use of air . . . practically eliminates wasteful "idling". The average working speed of the engine and compressor is reduced . . . more efficient operation . . . less wear.

How It Works

The DRILL-MORE Multi-Speed Regulator provides three working speeds—high, intermediate and low—**automatically selecting the slowest and most efficient speed** that will maintain the required air pressure. The MOBIL-AIR never "idles" unless the low speed produces more air than is being used

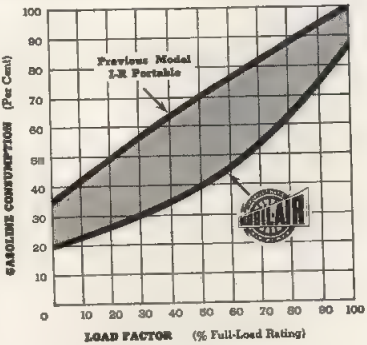
When less than half capacity is needed, the compressor "unloads" like other portables . . . "idles" for a while . . . but reloads at the slow speed, instead of accelerating to full speed. It thus runs slower and more efficiently while it works, and eliminates up to 90% of the usual number of idling periods. When greater capacity is required, the machine automatically speeds up.

Since most portable compressors operate much of the time at part capacity, the MOBIL-AIR makes large savings in fuel costs under actual working conditions . . . and the average working speed is much less than rated speed . . . less wear and tear . . . longer life.

Up to 40% Less Fuel to Do an Average Job

The area between the curves above represents typical fuel savings due to the NEW and more efficient compressor, the NEW high-economy gasoline engine, and the DRILL-MORE Regulator.

The MOBIL-AIR equipped with this regulator



gives you 15% more air per gallon of gasoline at full load . . . 83% more at half load.

More Work from Air Tools

Jackhamers and similar air tools drill up to 15% faster when the compressor is equipped with the DRILL-MORE Regulator.

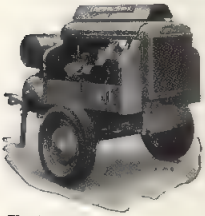
Such Outstanding Savings Will Quickly Repay the Original Cost of a MOBIL-AIR

An Ingersoll-Rand Product

222-4-41

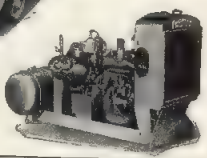
The D-Series MOBIL-AIR for smaller Jobs

Models D-60 and D-85 Two-Stage, Air-Cooled



The D-60 and D-85 Deluxe Models are easily towed, have built-in tool boxes with hinged covers.

D-60 Push-About Model — can also be easily hauled in light truck.



UD-60 for mounting onto or building into truck body.

IMPORTANT NOTICE

As is commonly understood, PNEUMATIC TIRES ARE NOT AVAILABLE for the duration of the war. This applies to all models of MOBIL-AIR described on the previous pages. Steel wheels are available in all cases in place of pneumatic tires.

Also, Model K-506 will only be furnished with spring mounting and automotive steering.

Either of these handy little compressors . . . and the many air tools it will operate . . . make an ideal combination for small contracts and odd jobs. With a few gallons of gasoline it provides a self-contained Air-Power unit . . . for use anywhere.

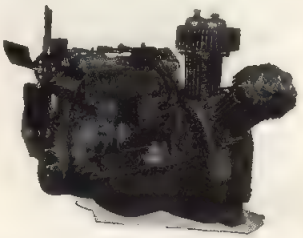
On big contracts, they can handle the smaller or urgent here-and-there jobs, eliminating transportation and tie-up of the larger compressors.

The D-60 and D-85 are high-quality, engineered units in which particular emphasis has been given to compactness and light weight without any sacrifice in durability and reliability.

The compressor is two-stage air-cooled, and equipped with Channel Valves. The engine is a Waukesha 4-cylinder, force-feed lubricated, heavy-duty type. It is built for gasoline operation only.

The engine and compressor are built together as one rigid, unified assembly, yet each have their own crankcase, lubrication system and cooling system. The inner end of the compressor shaft connects directly to the engine shaft, thereby forming the shortest and most compact arrangement. This is an I-R patented feature.

Push-button electric starting is standard on the De Luxe and Utility Models.



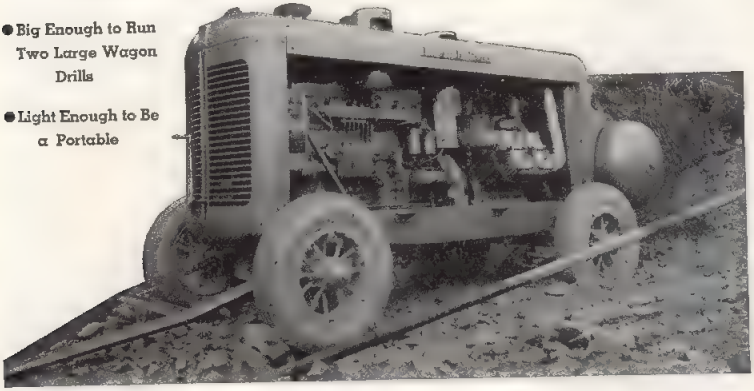
Being small and easy to start, no clutch is furnished in the D-60 and D-85. A one-step regulator is provided, and a speed controller reduces the machine to idling whenever the compressor unloads.

MODEL	D-60	D-85
Actual capacity (cfm. free air delivery) at 100-lb. pressure	60	85
Number compressor cylinders—		
Low pressure	2	2
High pressure	1	1
Number of engine cylinders	4	4
Two wheel Deluxe model net weight	1725 lbs.	1900 lbs.
Push-About model—net weight	1200 lbs.	.....
Length	6'-0"	.....
Width	2' 8½"	.....
Height	4'-0"	.....
Utility model—net weight	1125 lbs.	1675 lbs.
Length	6'-3"	6'- 2"
Width	2' 8½"	2'-10¼"
Height	3'-3"	3'-4"

222-9-43

A 500 cu. ft. MOBIL-AIR weighing only 10,400 lbs.

- Big Enough to Run Two Large Wagon Drills
- Light Enough to Be a Portable



The Only Unit of Its Size Available for Either Oil or Gasoline Operation ... And the Only One With a Convertible Engine

Compare the K-500 MOBIL-AIR with anything previously available. Think of it . . . a self-contained portable air-power plant weighing only 10,400 pounds with either oil or gasoline engine . . . but little more than half as much as machines of smaller capacity a few years ago.

Since its introduction early in 1940, the K-500 has proved itself to be the most successful and most outstanding portable compressor development in the past decade. Already it has been used on most of the large jobs throughout the United States.

In spite of its light weight, the K-500 MOBIL-AIR has demonstrated that it "can take it". You don't need to rely on our word . . . talk to owners and operators who are using K-500 units.

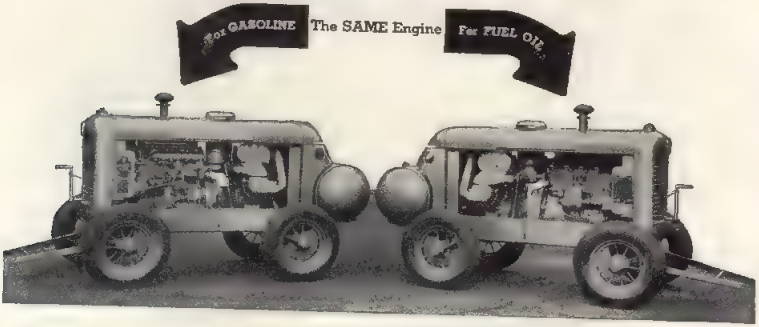
Although the K-500 is big enough to run two large wagon drills, the DRILL-MORE Regulator makes it even more efficient at half load than at full load. Thus, contractors can now afford to buy this 500 cu. ft. compressor even though a fairly large number of their jobs would require only one wagon drill or less than a full load of lighter tools. On many drilling jobs, no more fuel will be required than if a smaller compressor were used.

An Ingersoll-Rand Product

Two 500-ft. MOBIL-AIR Portables, each running two I-R Wagon Drills.

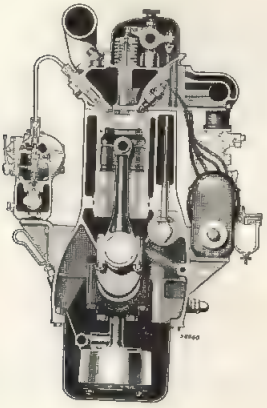
223-6-41

The K-Series MOBIL-AIR gives you Two Units in One



The MOBIL-AIR has a CONVERTIBLE Engine

In the K-Series MOBIL-AIR Ingersoll-Rand offers the first portable compressor ever available with a convertible engine that can be changed from oil to gasoline operation, or from gasoline to oil by a simple substitution of fuel accessories purchased for that purpose . . . in your own shop . . . no changing of engines or engine heads or pistons. Such a feature makes it possible to take full advantage during the entire life of the machine of the lowest fuel price in any locality.



This Outstanding Engine Development

This Waukesha Multi-Fuel Engine makes available by a simple alteration, either of two remarkable types of engines—the new high-economy gasoline engine or the well-known Ingersoll-Rand Type H low-compression oil engine. This has been accomplished without any compromise or sacrifice of vital economies.

In addition, many mechanical improvements make this portable engine more than ever a heavy-duty type that is easily and inexpensively maintained. The engine has overhead valves, automatic temperature control, replaceable wet cylinder liners, wedge-type, non-sticking piston rings, full pressure lubrication, and pinhole timing.

As a High-Economy Gasoline Engine

It operates with extraordinarily good gasoline economy . . . far better than any previous engine . . . and under all load conditions.

As a Low-Compression Oil Engine

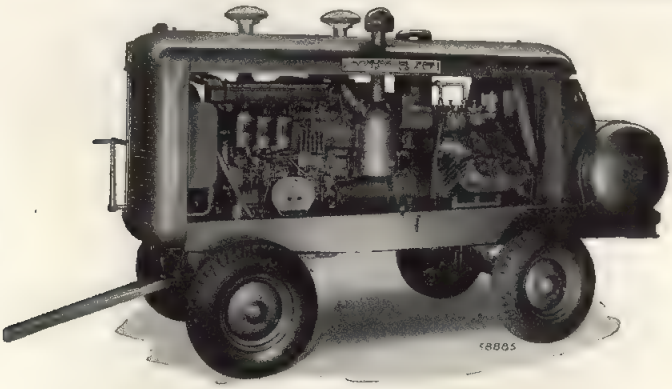
It is outstanding for easy starting, simplicity, maintained power and economy, low maintenance and long life. It requires only one-fourth of the compression pressure needed by small-bore compression-ignition engines . . . maximum pressures in the cylinders are less than half. Naturally it is lighter in weight. Spark ignition assures smooth operation with complete combustion and clear exhaust under all loads . . . with a wide range of fuels.

This oil engine is easily hand-cranked, although push-button electric starting is recommended for the K-210, K-315 and K-500 and is available for all sizes. The engine starts on gasoline . . . does not require oversize batteries or an auxiliary starting engine with clutch and transmission. It is not sensitive to loss of compression, and remains easy to start.

An Ingersoll-Rand Product

222-3-41

A MOBIL-AIR with INTERNATIONAL UD-18 DIESEL



For users interested in operation on fuel oil only, the 315-cfm. MOBIL-AIR is also available with the famous UD-18 International Harvester full Diesel engine. This unit, known as the IK-315, cannot be converted for continuous operation on gasoline, but in all details other than the engine it is like the standard K-315 MOBIL-AIR. It incorporates the Two-Stage Air-Cooled Compressor, the DRILL-MORE Multi-Speed Regulator, the new clutch, grouped controls, unified assembly of engine and compressor, spring mounting with automotive steering, and all the advantages of the I-R patented streamlined design.

Easy-Starting UD-18 Diesel Engine

In addition to its well-established record for reliability and fuel economy, the UD-18 compression-ignition Diesel is noted for its unique starting system which eliminates the need for an extra starting engine or costly high-voltage starting equipment.

The UD-18 Diesel is temporarily converted into an ordinary gasoline engine during the starting process. This makes starting not only easy, but positive, regardless of weather conditions or temperature. It permits starting by means of a 12-volt battery system or by hand-cranking. Push-button electric starting is standard equipment on the IK-315 MOBIL-AIR.

To facilitate starting, a starting valve in each cylinder opens into the combustion space, adding an auxiliary chamber to the combustion volume. This reduces the compression pressure to that of a conventional gasoline engine, thus making the engine easy to turn over. Another valve opens the carburetor to the intake manifold, while still another valve opens the gasoline shut-off valve, and the magneto ground is broken so that current can be supplied to the spark plug which is located in the auxiliary combustion chamber. The engine is then ready for starting on gasoline.

While the engine is operating on gasoline, the heat of combustion rapidly warms the cylinders so that from a cold start the change-over to operation as a full Diesel, ready for work, can ordinarily be made inside of one minute.

A single change-over lever shuts off the gasoline, spark plugs, the carburetor intake, and the auxiliary combustion chambers used for gasoline starting, since these have no connection with the Diesel operation.

Long Life . . . Low Maintenance

The UD-18 Diesel is a heavy-duty type . . . sturdily built . . . expertly engineered. It has overhead valves, replaceable wet-type cylinder liners, a 7-bearing crankshaft, full-floating piston pins, force-feed lubrication and many other features that help make it a fine Diesel engine.

IK-315 MOBIL-AIR

An Ingersoll-Rand Product

2-22-7-41

More about the K-Series MOBIL-AIR

We Invite Comparison

of MOBIL-AIR details. Into this unit Ingersoll-Rand has built high efficiency, convenience, strength, rigidity, durability and reliability. It is an engineered unit with nearly 40 years portable-building experience behind it.

New Type Clutch

has automatic take-up . . . no sliding splines . . . easy to inspect and reface . . . no parts to grease or oil.

Grouped Controls

. . . Clutch lever, instrument panel and all other controls are grouped on the same side of the unit.

Push-button Starting

is standard equipment on some of the larger sizes and is available on all sizes.

Cool Air Intake

. . . The air intake for the compressor is outside of machine instead of under the roof, resulting in 4% to 6% more compressed air being available at the tools.

Rigid Radiator Shell

with heavy guard protects radiator cores, adds rigidity to whole mounting . . . prevents chafing and leaks in cores. The intercooler is protected by heavy cowling which forms part of the streamlining.

Sectionalized Cores

for both intercooler and radiator permit quick and inexpensive replacement of a damaged section.

Heavy-Duty Wheels and Axles

are built to "take the knocks."

Expansion Connection

between the compressor discharge and air receiver avoids expansion difficulties and promotes safety.

Fuel Tank Is Placed Low

for easy re-fueling . . . big enough for a day's run . . . sturdy construction.

Let Us Show You the Ingersoll-Rand MOBIL-AIR

Model K-210 MOBIL-AIR with spring mounting, automotive steering and push-button starting. It is fitted for operation on oil, and has a 6-cylinder compressor and a 6-cylinder engine.

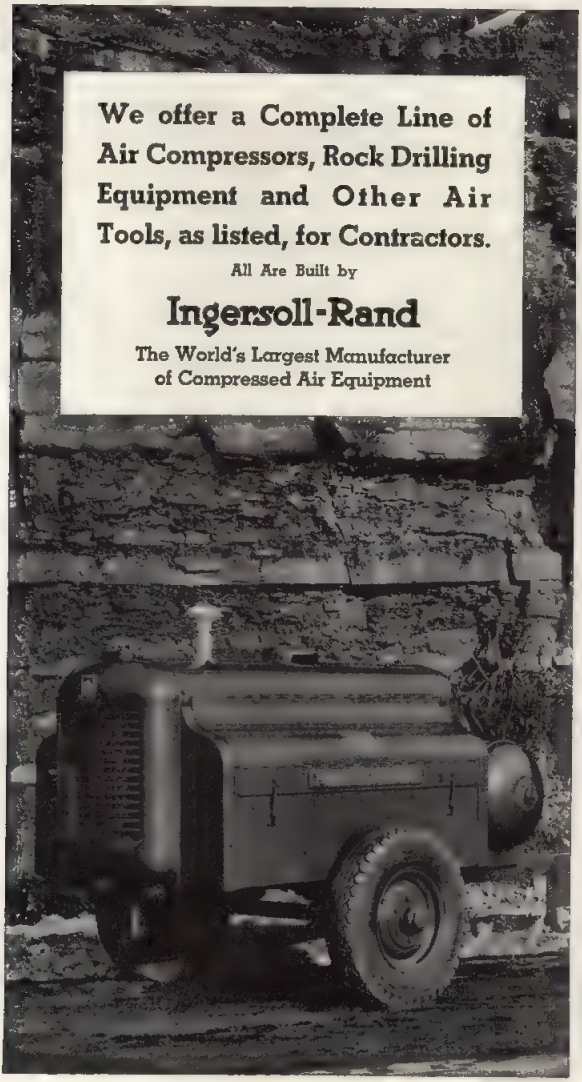
An Ingersoll-Rand Product

Up to 33⅓% Less Weight . . . Easier to Handle

MODEL	K-105	K-160	K-210	K-315	IK-315 **	K-500
Actual capacity (cfm. free-air delivery at 100-lb. pressure)	105	160	210	315	315	500
Number of compressor cylinders—						
Low pressure	2	2	4	4	4	4
High pressure	1	1	2	2	2	2
Number of engine cylinders	4	4	6	6	6	6
* NEW WEIGHT (lb.)—						
2-Wheel deluxe trailer	3400	4450	.....	.....	.....	.....
4 Pneumatic tires—king-pin steering	3200	3960	.....	.....	.....	10300
4 Steel wheels—king-pin steering	3200	3960	.....	.....	.....	10300
4 Pneumatic tires—springs—automotive steering	.....	.....	5300	7100	7870	.....
4 Steel wheels springs—automotive steering	.....	.....	5300	7100	7870	.....
Skid mounting (deluxe)	2950	3840	.....	.....	.....	9000
Skid mounting (standard)	2850	3390	4600	6470	7010	.....

* Weights are for units with gasoline engines. When fitted for operation on oil, they weigh from 50 to 100 lbs. more.
** For users interested in operation on fuel oil only, the 315 cfm. size (known as Model IK-315) is available with the International UD-18 full Diesel engine as described on the following pages.

222-5-41


We offer a Complete Line of Air Compressors, Rock Drilling Equipment and Other Air Tools, as listed, for Contractors.
All Are Built by
Ingersoll-Rand
The World's Largest Manufacturer of Compressed Air Equipment

PRODUCTS

- Backfill Tampers
- Compressors, Gasoline and Fuel Oil Engine
- Concrete Vibrators
- Couplings, Hose
- Demolition Tools
- Diggers, Trench and Clay
- Drill Mountings
- Drill Steel
- Drill Steel Cutters
- Drills, Power-Feed
- Drills, Diamond and Calyx
- Drills, Pavement Testing
- Drills, Prospecting
- Drills, Rock
- Drills, Wagon-Mounted
- Furnaces, Oil
- Grinders, Pedestal and Shank
- Hoists, Air
- Hoists, Single-Drum
- Hose, Air
- Jackhamer Drills
- Jackbits (Detachable Bits)
- Jackfurnace
- Jackmill
- Jackpunch
- Jackrods (Drill Rods threaded for Jackbits)
- Jackbit Grinders
- Jackrod Threading Equipment
- Lubricators, Air Line
- MOBIL-AIR Compressors
- Paving Breakers
- Pile Drivers
- Pumps, Pneumatic Sump
- Saws, Safety-First Air
- Sharpeners, Drill Steel

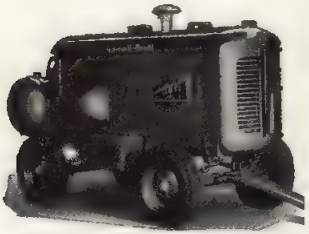
222-1-48

The K-Series MOBIL-AIR has the I-R Streamlined Mounting

New Mountings

The 160 cu. ft. size as well as the 105 is now available in the 2-wheel deluxe trailer mounting. Also, the 210 and 315 cu. ft. sizes have a new spring mounting with automotive steering as standard.

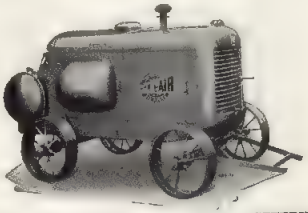
FOUR PNEUMATIC TIRES . . . KING-PIN STEERING. For K-105, K-160 and K-500.



Four Pneumatic Tires . . . Spring Mounting . . . Automotive Steering for K-210 and K-315.

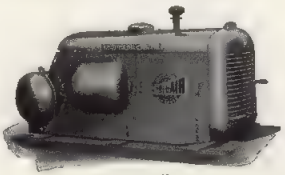
Truck Mounting . . . Deluxe Model Illustrated.

TWO-WHEEL DELUXE TRAILER FOR K-160 AND SMALLER. Timken roller-bearing wheels, leaf-type springs, built-in tool boxes and hinged doors.



FOUR STEEL WHEELS . . . KING-PIN STEERING. For K-105 and K-160 only.

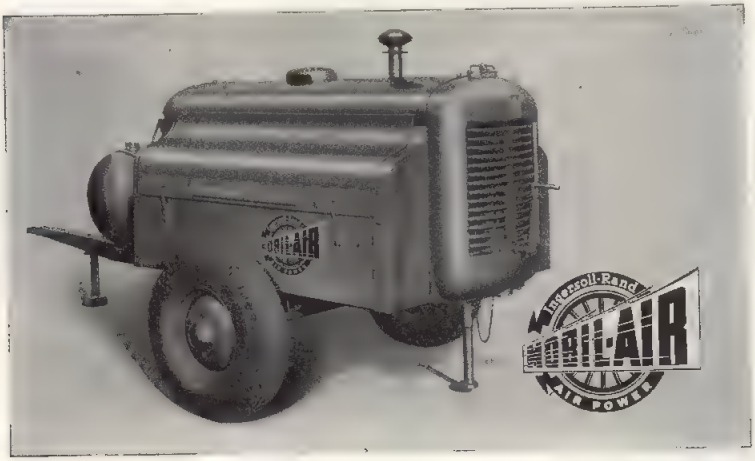
Four Steel Wheels . . . Spring Mounting . . . Automotive Steering for K-210 and K-315.



Skid Mounting.

An Ingersoll-Rand Product

222-B-41



A STARTLING NEW DEVELOPMENT FULL OF MONEY-SAVING FEATURES

Again Ingersoll-Rand Sets Another New Standard in Portable Air Compressors

The K-Series MOBIL-AIR is a completely new development . . . a superior machine that incorporates many new ideas. It is made just as compact and light in weight as is consistent with Ingersoll-Rand's standard of sturdiness and durability. During the three years in its making, every detail underwent development, refinement and gruelling tests. It retains the distinctive and patented Ingersoll-Rand "stream-lined for a purpose" design that has become so popular.

You need less money to operate it . . . less to transport it . . . less to maintain it. The MOBIL-AIR cuts the over-all cost of compressing air and provides a wider field of usefulness.

We now offer the MOBIL-AIR as the greatest value you have ever been able to buy in a portable compressor. It is another step in the continued progress Ingersoll-Rand has made in portable development since 1902.

Ingersoll-Rand also builds the tools that use the air . . . giving you a complete **AIR-POWER OUTFIT** from one manufacturer. Many of the I-R AIR TOOLS shown in following pages are also new developments. They, too, will help you save money and speed up your jobs.

An Ingersoll-Rand Product

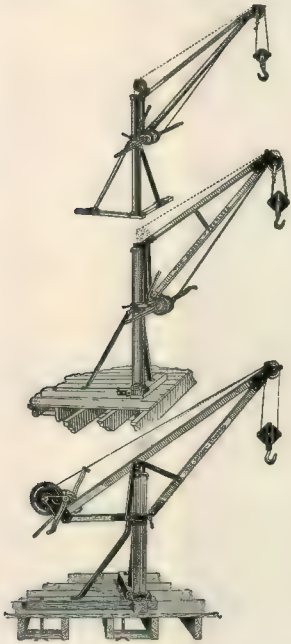
A Complete Line of Portable Air Compressors 60 to 500 cfm. (actual free-air delivery)

222-2-41

SASGEN CHAMPION

Swings Full Circle. Built of All Steel. Fittings Malleable.

Has self-lubricating bushings, load and boom brake. Boom can be removed in a few seconds. Bottom sills and mast fold together, making it in two parts, compact enough so that a contractor can haul it to jobs in his auto. Capacity, 1,000 lbs.; weighs only 225 lbs. Can be operated by hand horse or power. Height, 7½ ft.; boom extends 4 ft. 6 in. Equipped with 110 ft. ¼-inch plow steel cable, load block, cleats and bolts for fastening, complete ready for work. Is very practical for hoisting flooring, joists, wheelbarrows on two and three-story buildings.



Price, hand power. ....
Price, hand and power ....
Extra cable, per foot..... .....

Drum holds 135 ft. ¼-inch cable.

Sasgen Peerless

Swings Full Circle. Built of All Steel. Fittings Malleable.

Has self-lubricating bushings, load and boom brake, can be used hand, horse or power. Boom can be taken off in an instant. The bottom sills and mast fold together, making it easy to remove or put up. Many contractors haul them to jobs in their automobiles. For the above reasons the machine is almost indispensable to contractors who build from 2 to 4-story buildings; for hoisting joists, timber, iron, stone, terra cotta, reinforcing bars, wheelbarrows, etc. Capacity, 1,800 lbs.; weight, 325 lbs.; height, 8 ft.; boom extends 4 ft. 6 in. Equipped with 125 ft. ¼-in. plow steel cable, load block, cleats and bolts for fastening, complete, ready for work.

Price, hand power. ....
Price, hand and power..... .....
Extra cable, per foot ....

Drum holds 175 ft. ¼-inch cable.

Sasgen Standard

Swings Full Circle. Built of All Steel. Fittings Malleable.

Is equipped with a geared winch. Can be used hand or power. Built strong and durable.

Has boom and load brake and is built so that the boom can be quickly detached. Mast folds to bottom sills, making it easy to take apart or set up. For hoisting loads 1,500 to 2,500 lbs. by hand or power our STANDARD CIRCLE SWING DERRICK has no equal and is the only full circle swing builder's derrick of that capacity.

Capacity, 2,500 lbs.; weight, 425 lbs.; height, 8 ft.; boom extends 4 ft. 2 in. Equipped with No. 110 geared winch, 150 ft. ⅜-in. plow steel cable, load block, cleats for fastening, complete, ready for use.

Price, hand power ....
Price, hand and power. ....
Extra cable, per foot..... .....

Drum holds 275 ft. ⅜-inch cable.

Our Motto: Satisfaction or No Sale. Derricks Shipped on Trial to Reliable Contractors. Give Us a Trial. Apply to Distributor for Prices.

SASGEN IMPROVED SETTER DERRICKS

Top Point S. D.

Top Point and Regular Style

Have many improvements over the old style Setter Derricks. The top frame is made of best malleable iron, equipped with two sheaves, does away with the block on top, increases the hoisting height about two feet, extends forward keeping load from scraping derrick, has lugs for guy lines in front and back and clamps for fastening extension pole if necessary. Shaft boxes are so constructed that drum and gear shaft can be taken off without removing boxes. The bottom and side pieces are connected with two malleable castings. This makes a very strong connection and enables to take derrick apart easily if necessary. Gears are 'leable

Top Point				Regular			
Capacity	Length	Price	Wt.	Capacity	Length	Price	Wt.
3,000	18	.....	440	4,000	18	.....	496
3,000	20	.....	459	4,000	20	.....	511
3,000	22	.....	481	4,000	22	.....	525

Regular S. D.

Fish Tackle to Swing Derrick Out and In Containing 5 Blocks and 50 Feet ⅝-Inch Rope.

For longer lengths or more capacity write for price.

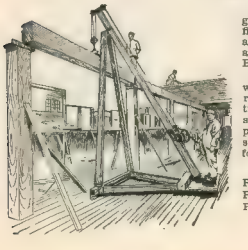
Sasgen Pole Derricks

Are used by many contractors, builders, stone and iron setters, setting trusses, timbers, girders, heavy joists, columns, stone, iron beams, etc., and they are about the most suitable and practical derricks for that purpose. Our Pole derricks are equipped with malleable top sheave frame for 4x6, 6x6 and 6x8 derricks and crucible steel top sheave frame on 8x8 derricks, which acts as a block and extends in the front, so the load can be hoisted without scraping pole. Has lugs for guy lines and sheave in back to bring cable to hoisting drum. Has a bottom sill equipped with rollers, well braced to pole. The 4x6 Pole Derrick is equipped with No. 3 winch, not geared, 100 ft. ¼-in. plow steel cable and load block. The 6x6 with No. 110 geared winch, 125 ft. ⅜-in. plow steel cable and load block. The 6x8 with No. 128 geared winch, 125 ft. ⅜-in. plow steel cable and load block. The 8x8 with No. 171 double purchase winch, 125 ft. ½-in. plow steel cable and load block.

Size 4x6				Size 6x6				Size 6x8				Size 8x8			
Cap.	Ft.	Price	Wt.	Cap.	Ft.	Price	Wt.	Cap.	Ft.	Price	Wt.	Cap.	Ft.	Price	Wt.
1,400	16	.	211	2,500	18	. .	335	4,000	18	.	540	8,000	18		626
to	18	.	223	to	20	.	348	to	20		560	to	20		658
1,500	20	.....	235	3,500	22	.....	364	5,000	22	. .	580	10,000	22	. . .	700

The above are regular stock sizes. We have them in longer lengths. Write for prices. Can furnish "Fittings Only" if desired.

Sasgen "A" Frame Derrick



This derrick is the most practical and handy machine for setting girders, timbers, columns, beams, joists, etc. Is made of malleable fittings. Is mounted on swivel rollers and can be easily moved around on floor. We also make this derrick in a Combination Pole and "A" Frame. This enables to use pole separate with guy lines. By removing 4 bolts the machine comes in 2 parts.

We can also furnish our "A" Frame mounted on 4-wheel truck, wheels about 16" high and arranged so that the "A" Frame Derrick can be placed so as to raise from the end or from the side of truck. Derrick mounted on truck is most desirable where the surface is uneven and where it is necessary to run machine on planks. Our "A" Frames are equipped with 125 ft. ⅜-inch plow steel cable, No. 110 geared winch and load block, complete, ready for use. Capacity, 2,500 pounds.

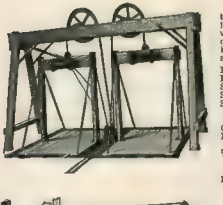
	Height 20 Ft.	Height 22 Ft.	Wt. Lbs.
Regular "A" Frame Derrick	.....	.....	745
Pole Derrick Combination	.....	.....	775
Pole and "A" Frame Combination, mounted on 4-wheel truck	.....	.....	995

Apply to Distributor for Prices.

61-2-43

SASGEN MATERIAL ELEVATOR

Wood or Steel



Double or Single Cage

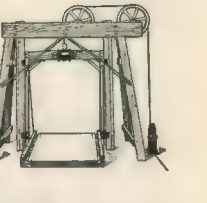
Cages are built of oak wood and well braced with iron rods. The truss beam is oak wood firmly bolted together, provided with suitable sheaves mounted on steel shafts, equipped with malleable iron boxes. We can also furnish these sizes in ALL STEEL construction

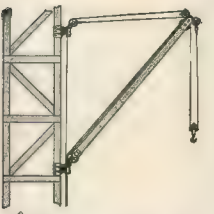
Double Cage, 3′ x 5′ 6″	881 lbs
Double Cage, 4′ x 6″	1010 lbs
Single Cage, 4′ x 6′	621 lbs
Single Cage, 6′ x 6′	855 lbs.
Single Cage, 6′ x 7′	979 lbs.

Price does not include guides

Guides, per lineal foot
Brake attached for horsepower, extra
⅝″ Dia. Cable for Hoist Line, per foot

Write for prices on Steel Material Elevators.



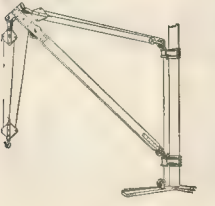


Sasgen Tower Boom

1-Ton Capacity

The Sasgen Tower Boom has all crucible steel and malleable fittings and is light and strong. Suitable to fasten to 6x6 column. The boom is made of two pieces 3 x 6, with a spreader in the middle. This gives the boom extra strength both ways. Fittings are arranged so that the boom and load line can be handled on a double drum hoist. The boom line can be tied stationary. The boom swing a three-quarter circle and is very practical to connect to towers and columns, and for hoisting various material into the building.

Boom 14 ft. with Top and Bottom Tower Fitting	300 lbs.
Boom 14 ft. without Top Tower Fitting	285 lbs.
For longer lengths, add additional price	...
Price, Fittings only, no bolts	175 lbs.
Without Top Tower Fitting	140 lbs.



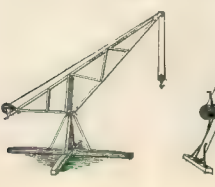
3-Ton Capacity

All fittings are cast crucible steel. Top and bottom fittings can be furnished to bolt to corner of post 12 x 12 in size, or to flat side of column or post. When ordering fittings for flat side of post or column, state size of same. The boom and load lines run through openings in top and bottom trunnions. The boom is made of 8 x 8 timber and swings ¾ circle.

Boom 20 ft. long with top and bottom fittings complete except cable	930 lbs.
Boom 20 ft. long without top corner fitting and 1 boom block	765 lbs.
For longer lengths of boom, add additional price	...
Fittings only, complete	610 lbs.

Sasgen Circle Swing Counterweight Derrick

Is especially handy around foundries or yards where heavy castings, iron or pipe, beams and bars, timbers, stone, etc., are loaded or unloaded and for handling boats on docks or platforms in and out of water. Also for building and excavating. The machine can be used portable or stationary. It has a height of 14 ft., and boom extends 8 ft., weight about 925 pounds, and a capacity of 1,500 pounds, with No. 110 winch, 75 ft. of ½-inch plow steel cable and load block, ready for use, not including counterweight.
Price



Sasgen Tripod Derrick

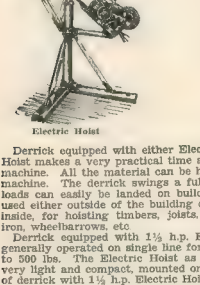
Is light, strong and easily moved around, practical for laying sewer pipe, setting monuments, and placing burial vaults, digging trenches, pulling casings, and many other purposes. Derrick 2000 - 3000 pound capacity equipped with No. 108 winch. Derricks 4000 pound capacity equipped with No. 110 winch, load block, 100 feet ⅜ in. plow steel cable, ready for use.

Height	Capacity 2,000 to 3,000 Lbs. Price	Weight	Capacity 4,000 Lbs. Price	Weight
12 ft		303 lbs.		372 lbs
14 ft.		311 lbs.		408 lbs.
Fittings only		75 lbs.		90 lbs.
Fittings only with winch and cable		180 lbs.		195 lbs.

51-2-43

SASGEN STANDARD

With Electric Motor or Gasoline Hoist



Electric Hoist

Gasoline Hoist

Derrick equipped with either Electric or Gasoline Hoist makes a very practical time and labor saving machine. All the material can be hoisted with this machine. The derrick swings a full circle, so that loads can easily be landed on building. It can be used either outside of the building or from opening inside, for hoisting timbers, joists, stone, flooring, iron, wheelbarrows, etc.

Derrick equipped with 1½ h.p. Electric Hoist is generally operated on single line for loads from 300 to 500 lbs. The Electric Hoist as shown above is very light and compact, mounted on derrick. Price of derrick with 1½ h.p. Electric Hoist having three-phase, 60-cycle, 220 volts, alternating current motor, also 175 ft. ⅜-inch cable is.....

When motor of other phase, cycle, voltage or current is desired write for price. Mention what current, voltage, phase or cycle when ordering. If derrick is desired for hand and power, add extra for hand winch.

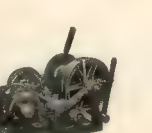
Gasoline Hoist is easily connected directly in back of derrick and can also be used on any floor below the derrick, by running the cable down through the mast and floor to a snatch block below and then to the hoist. This is the lightest and most practical Gasoline Hoist and Derrick combined on the market for hoisting loads of building material from 500 to 2,000 lbs.

Price of Derrick with 3 h.p. Gasoline Hoist and 175 ft. ⅜-inch cable is.....

Sasgen 5-Horsepower Gasoline Hoist

Is used by Contractors for light loads. A Wisconsin 5-horsepower engine is used as power plant. The winch is of the friction type. The drum runs free on the shaft, having bronze bearings. By operating a cam lever the drum engages a cone friction in the main gear. The brake band is operated by a foot lever for holding and lowering loads. A pawl is also provided which engages a ratchet on the drum flange, for holding loads at any point without using brake. The power of the engine is transmitted to the hoist by means of cut gears. The hoist can be adapted to many purposes where light loads are handled. The line speed is 100 ft. per minute; single line pull, 1,000 lbs., drum holds 800 ft. of ⅜-inch cable. Floor space required is 25"x36". Wt., 375 pounds without engine.

Sasgen Hoist, Equipped with 1½ H. P. Master Electric Motor or 3 H. P. Wisconsin Gasoline Engine



Hoist with motor can be bolted to floor in a horizontal, or to a post in a vertical, position. Hoist with gasoline engine can be used in floor position only.

Hoist is of the friction drum type. The drum runs free on the shaft, having bronze bearings. By operating a cam lever the drum engages a cone friction in the main gear. The brake is used for lowering or holding loads. A pawl is also provided which engages a ratchet on the drum flange for holding loads in any position.

Hoist equipped with 1½ H. P. Master Motor, has a line speed of 85 ft. per minute; single line pull 500 lbs. Hoist equipped with 3 H. P. Wisconsin Air-Cooled Gasoline Engine has a line speed of 120 ft. per minute, single line pull 500 lbs.

Drum of hoist holds 450 ft. of ⅝" cable; over-all dimensions are 23x29", bed plate is 17x26".

Hoist with 1½ H. P., 3 phase, 60-cycle, 220-volt, alternating current motor is..... Wt 380 lbs.

Hoist with 3 H. P. Gasoline Engine is..... 496 lbs.

For Motor of Different Phase, Cycle, Voltage or Current, Kindly Write for Price.

Sasgen 5 Horse Power Electric Hoist

Non-reversible single drum electric hoist of the friction drum type. Drum runs free on the shaft having bronze bearings. By operating a cam lever the drum engages a cone friction in the main gear. The brake is operated by a foot lever for holding and lowering loads. A pawl is provided which engages ratchet on the drum flange for holding loads at any point without using brake. Power is transmitted from 5 horse-power motor by means of silent chain and sprockets to drive pinion shaft. Gears are machine cut from malleable iron blanks, which insures smooth running. Line speed of hoist is 100 ft. per minute; single line pull, 1,000 lbs. Drum holds 800 ft. ⅜" cable Floor space required, 25"x48". Wt. without motor, 475 lbs Wt. with motor, 800 lbs.

Price for hoist with A. C. motor.....

Price for hoist with D. C. motor extra. . ...

61-4-43

Sasgen Power Worm Driven Truck Winch

(Power for operating this winch is taken from truck motor through power take-off attached to truck transmission.)

This cut shows non-reversible power take-off worm driven winch to be operated from transmission by sprockets and chain drive. Can also be driven with electric motor.

The drum is driven by a friction cone type clutch covered with a tapered ground lining, operated by cam lever, and runs free on the shaft to revolve in either direction when not engaged

For releasing load use brake, also covered with a heavy duty woven brake lining. A pawl which engages a ratchet on the drum flange holds load in any position.

Worm and gear are enclosed in a gear case

Cable capacity of drum 500 ft. ½-in. cable; ratio of worm and gear 36 to 1; capacity single line 2500 lbs.; using blocks and four part line, lifting capacity of this winch is 10,000 lbs.; weight 350 lbs.

Price of winch without chain drive to transmission or niggerhead . . . . . .

Price of niggerhead extra. . . . . .

Sasgen Ideal Truck Derrick—Hand or Power— To Handle Heavy Material

Capacity, 3000 lbs. Boom can be raised and lowered. Boom lengths from 6 to 15 ft. Derrick, with boom, 6 to 8 ft., swings a complete circle. Derrick with 9 to 15-ft. boom has special long braces fastened to top of mast and swings 180 to 270 degrees, according to arrangement of braces. Boom is equipped with a double drum winch for hand power. This derrick arranged for power can also be equipped with our Power Worm Driven Truck Winch, which is operated direct from transmission take-off with sprocket and chain drive. On a power derrick, load line is operated by power, and boom line by single-drum hand winch.

Price, for Hand Power Derrick . . . .

Price, for Power Derrick . . . . . .

Price, for Power Derrick, with Power Worm Winch . . . . . .

The cut shows our Universal Derrick No. 1 mounted on truck. Truck is shown equipped with an outrigger. This derrick is especially handy for loading trees, and is used extensively by nurseries. Has a capacity of 4000 lbs., a three-quarter swing, and can be had with boom lengths from 6 to 9 ft. The mast is made of heavy pipe and equipped with extra sleeves to give it ample strength. Boom is equipped with single drum double purchase winch for hand power. When derrick is equipped for power only on load line, a single drum double purchase winch is furnished. This derrick, if used for power, can also be used with Worm-Driven Truck Winch.

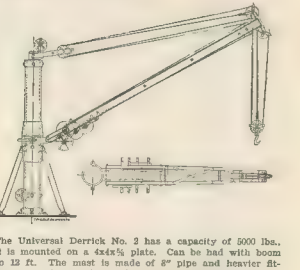
Price, for Hand Power Derrick . . . . . .

Price, for Power Derrick . . . . . .

Price, for Power Derrick with Power Worm Winch. . . . .

This derrick can also be mounted on a steel plate at an extra charge.

Sasgen Universal Derricks for Hand or Power



The Universal Derrick No. 2 has a capacity of 5000 lbs., and is mounted on a 6x8½ plate. Can be had with boom 6 to 12 ft. The mast is made of 8" pipe and heavier fittings are used throughout. The boom is equipped with two single drum double purchase winches for hand power. For power the same arrangement can be had as for Universal Derrick No. 1.

Price, for Hand Power Derrick. . . . . .

Price, for Power Derrick. . . . . .

Price, for Power Derrick with Power Worm Winch. . . . . .

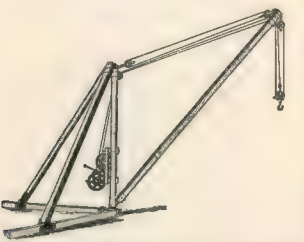
The above derricks can also be arranged that both load and boom lines can be operated by power.

61-5-43

Susgen Stiff-Legged Derricks with Split Mast and Boom

Made From One to Four Ton Capacity

For Large Derricks Refer to Our Solid Timber Type



The Reasons Our Derricks Are Stronger, Safer and Lighter Than Other Makes Is That We Use Steel Castings . . . No Cast Iron

Our Stiff-Legged Derricks are built with split mast and boom, fitted throughout with crucible steel and malleable fittings, making the derricks light and strong and easy to set up. They can be used by hand or power and for the above reason are especially handy on buildings. Gears and frames of our double hoisting winch are also made of malleable, which means safety and no breaking of gears. Our 1-ton bottom sills work hinge-like in front and can be set at angle desired.

One-ton legs and sills are 4 x 6, split mast and boom two-2 x 6.

Two-ton legs and sills are 6 x 6, split mast and boom two-3 x 6.

Three-ton legs and sills are 6 x 8, split mast and boom two-3½ x 8.

Four-ton legs and sills are 8 x 8, split mast and boom two-4 x 10.

Price Does Not Include Cable.

One-Ton Capacity

No.	Length of Boom Feet	Equipped for Power	With Double Drum Winch, No. 112, also for Power	Approx. Wt. Less Winch Lbs.
40	12			659
41	14			685
42	16			713
43	18			740
44	20			870
45	22			883
46	24			910

Two-Ton Capacity

No.	Length of Boom Feet	Equipped for Power	With Double Drum Winch, No. 141, also for Power	Approx. Wt. Less Winch Lbs
200	18			1,180
201	20			1,225
202	22			1,300
203	24			1,320
204	26			1,475
205	28			1,595
206	30			1,704

Three-Ton Capacity

No.	Length of Boom Feet	Equipped for Power	With Double Drum Winch, No. 141, also for Power	Approx. Wt. Less Winch Lbs.
220	20			1,860
221	22			1,960
222	24			2,070
223	26			2,180
224	28			2,270
225	30			2,320
226	32			2,646
227	34			2,865
228	36			3,120
229	38			3,375
230	40			3,600

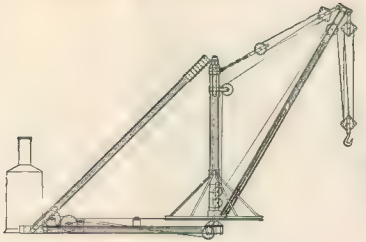
Four-Ton Capacity

No.	Length of Boom Feet	Equipped for Power	With Double Drum Winch, No.150, also for Power	Approx. Wt. Less Winch Lbs.
240	30			3,930
241	32			4,090
242	34			4,250
243	36			4,411
244	38			5,635
245	40			5,895
246	42			6,195
247	44			6,444
248	46			6,680
249	48			6,942
250	50			7,200

Apply to Distributor for Prices
Write for Prices on "Fittings Only."

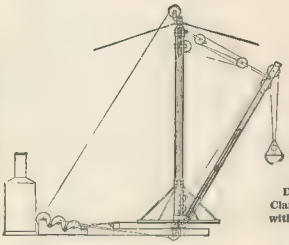
61-6-43

SASGEN SOLID TIMBER DERRICKS BUILT WITH CRUCIBLE STEEL FITTINGS

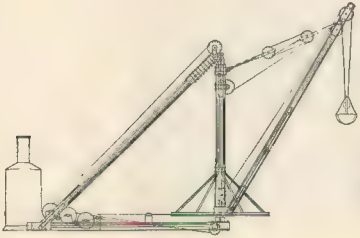


Stiff-Legged Derrick for Power with Bull Wheel

We Can Furnish a Complete Line of Stiff-Legged or Guy Line Derricks for Power, Hand Power or Clamshell Work. Also with Bull Wheel Up to 70-Ft. Boom and Up to 10-Ton Capacity. Fittings Are All Crucible Steel, Making Them Light, Strong, Safe and Durable. Sheaves Are Cast Iron, Furnished with Self-Lubricating Bronze Bushings.



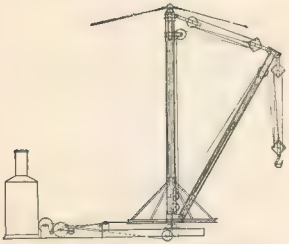
Guy Line Derrick for Clamshell Work with Bull Wheel



Stiff Legged Derrick for Clamshell Work with Bull Wheel

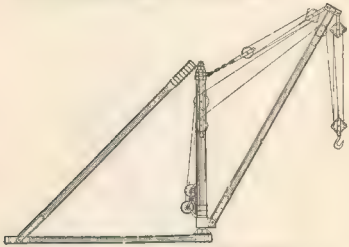
61-7-43

SASGEN SOLID TIMBER DERRICKS BUILT WITH CRUCIBLE STEEL FITTINGS

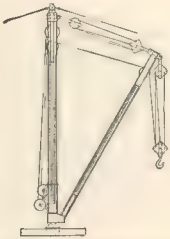


Guy Line Derrick for Power Only with Bull Wheel

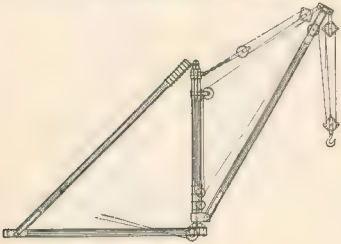
If desired, we can furnish the fittings only in 8, 10, 12 or 14-inch size. For prices on these Derricks, write and give capacity; length of boom; whether power, hand power or both; or for clamshell work, Stiff-Leg or Guy Line derrick; with or without bull wheel, also if cable is desired.



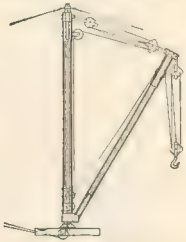
Stiff-Legged Derrick for Hand Power Only



Guy Line Derrick for Hand Power



Stiff-Legged Derrick for Power Only



Guy Line Derrick for Power

61-8-43

SASGEN ALL-CRUCIBLE STEEL DERRICK FITTINGS

Fittings are crucible steel which makes them light, strong, safe and durable. Sheaves are cast iron furnished with self-lubricating bronze bushings. If desired we can furnish fittings only in 8", 10", 12" or 14" size. When writing state capacity, length of boom and how derrick is to be used.

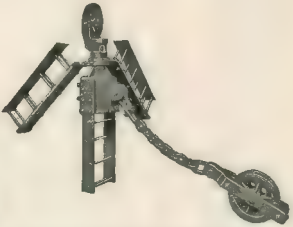
Stiff-Legged Derrick Mast Top for Hand Power

Guy Line Derrick Mast Top for Hand Power with Guy Cap

Stiff-Legged Derrick Mast Top for Power Derrick

Guy Line Derrick Mast Top for Clamshell Work with Rooster

Mast Top with Chain Block and Gooseneck for Power Stiff-Legged Derrick



Mast Top with Chain Block and Gooseneck also Rooster for Clamshell Work. For Stiff-Legged Derrick

Boom Point with Blocks for Stiff Legged or Guy Line Derrick

Chain Mast Block

Goose Neck

Guy Cap

Rooster

Mast Sheave Bracket

Double Boom Block

Mast Bottom for Power Stiff-Legged or Guy Line Derrick with Boom Bottom

Boom Bottom Straps

Mast Bottom for Hand Power Guy Line or Stiff-Legged Derrick

Sill and Leg Connection for Stiff-Legged Derrick

Mast Step for Power Stiff-Legged Derrick

Mast Step for Power Guy Line Derrick

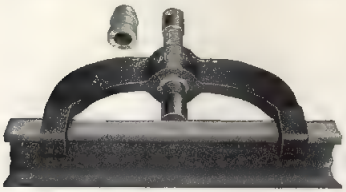
Mast Step for Hand Power Stiff-Legged Derrick

Mast Step for Hand Power Guy Line Derrick

This illustration is a sectional view of our standard cast steel foot block and cast steel mast step for power operation, showing the ball and socket bearing with oil chamber so constructed as to insure perfect lubrication at all times. Three steel pins are provided in cup of step casting which extend over head of pintle on foot block casting to prevent unmasting of derrick. The angle sheave pin bearings and rear plate are riveted to inside of foot block. The bolts passing through mast timber can be drawn up to take care of shrinkage of timber, thus securing firmness of mast timber and foot block. For hand power the foot block has 2 steel plates riveted inside with bolts passing through mast. Mast step is same as for power, but without bottom sheaves.

ALDON RAIL BENDERS

Indestructible steel frames with renewable screws and bronze bushings. Machine cut square thread screws with integral capstan heads.



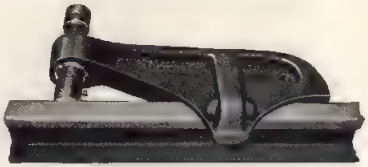
Jim Crow

Size	For Rails	Wt. Per Pair
No. 6	12 to 16 lb.	35 lb.
No. 5	16 to 25 lb.	50 lb.
No. 4	25 to 50 lb.	85 lb.
No. 3	50 to 75 lb.	110 lb.
No. 2	75 to 85 lb.	125 lb.
No. 1	85 to 100 lb.	150 lb.
No. 0	100 to 140 lb.	190 lb.

Also "Chicago Screw" and "Capstan" types.

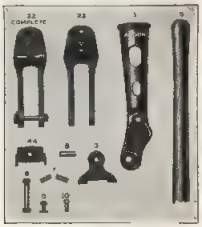
Samson

Size	For Rails	Wt. Per Pair
No. 4	12 to 45 lb.	35 lb.
No. 3	45 to 60 lb.	65 lb.
No. 2	60 to 80 lb.	110 lb.
No. 1	80 to 110 lb.	140 lb.
No. 0	110 to 140 lb.	190 lb.



ALDON HEAVY-DUTY CAR MOVER

Certified castings—hardwood tapered handle.



Its sturdy and heavy construction, combined with the proper distribution of the very best materials obtainable, make it the most efficient and durable car mover on the market.

A Compound Leverage between wheel and rail, making it possible for one man to move the heaviest cars. Spurs are tilted both downward and forward. This provides a double gripping power on the rail.

Spurs are so spaced that they will grip the narrowest as well as the widest rails with equal holding power. Cam is provided with two separate contact points, which allows it to adjust itself to the wheel, and follow it in full contact for the entire length of the stroke.

Other ALDON Track Tools—Portable Rail Saws—Track Drills—Track Levels

143-2-43

BADGER LINE Railway Car Movers and Wrenches

New Badger No. 5 Car-Mover

For general use, the New Badger is light and well balanced, yet has the power to move any loaded car. Most widely used of all tools for moving railway freight cars by hand. Castings of certified malleable of high tensile and ultimate strength.

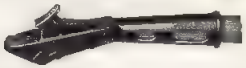
Weight 18 pounds. Length over all 70 inches.

Power-King Car Movers

Made for heavy duty, pushing more than one loaded car day in and day out. The compound leverage provides the powerful forward thrust, and double spurs grip the edges of the rail and prevent slipping. Made of certified malleable iron—special oversize handle.

Weight 18 pounds. Length 70 inches.

Badger Never-Slip Car-Mover No. 9



For moving railway cars, where avoidance of low brake beam interference is necessary. The Badger has a powerful compound leverage, double grip spurs that prevent slipping while the car is being moved.

Weight 18 pounds. Length over all 70 inches.

Advance Hopper-Bottom Car-Wrench

A Safety Wrench, fully and automatically adjustable to grip the square of any winding tap on hopper bottom cars.

Weight 16 pounds. Length 60 inches.

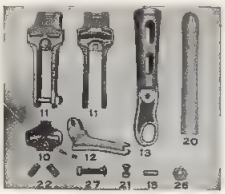
REPLACEMENT PARTS

No. 5 New Badger Car Mover Repairs

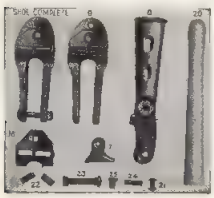
No. A—SHOE COMPLETE, with Spurs, Plate, Bolts and Rivets.....$3.00
No. A—SHOE ONLY, with Toe Rivet and No. 23 Bolt..... 2.00
No. B—SOCKET COMPLETE, with No. C Toggle attached and No. 23 Bolt..... 3.00
No. B—SOCKET ONLY, with No. 23 Bolt and No. 24 Rivet..... 2.00
No. C—TOGGLE or CAM with No. 24 Rivet..... 1.00
No. D—SPUR PLATE or CLAMP with No. 21 Bolt.....$0.50
No. 20—HANDLE — second growth Maple..... 2.00
No. 21—BOLT for attaching No. D plate..... .10
No. 22—SPURS, Slip-Proof Double..... .50
No. 23—BOLT, for attaching A shoe .20
No. 24—RIVET, for Cam C..... .10
No. 25 TOE RIVET—hard steel..... .20

Power King Car Mover Repairs

No. 11—SHOE COMPLETE, with Spurs, Plate and Bolts.....$3.50
No. 11 SHOE ONLY, with No. 27 Bolt..... 2.50
No. 13—SOCKET COMPLETE, with Saddle..... 3.50
No. 13—SOCKET ONLY, with No. 27 Bolt..... 2.00
No. 10—SPUR PLATE, with No. 21 Bolt..... .50
No. 12—SADDLE TOGGLE, with Rivet..... $1.00
No. 15—RIVET for roller..... .10
No. 21—BOLT for spur plate No. 10 .10
No. 22—SPURS, slip proof double... .50
No. 26—ROLLER..... .20
No. 27—BOLT for attaching No. 11 Shoe..... .20
No. 20—HANDLE, second growth Rock Maple..... 2.00



Badger No. 9 Car Mover Repairs



No. 9—SHOE COMPLETE, with Spurs, Plate, Bolts and Rivets.$3.00
No. 9—SHOE ONLY, with Toe Rivet and No. 23 Bolt..... 2.00
No. 8—SOCKET COMPLETE, with No. 7 Toggle attached and No. 23 Bolt..... 3.00
No. 8—SOCKET ONLY, with No. 23 Bolt and No. 24 Rivet..... 2.00
No. 7—TOGGLE or CAM with No. 24 Rivet..... 1.00
No. 16—SPUR PLATE or CLAMP with No. 21 Bolt.....$0.50
No. 20—HANDLE — second growth Maple..... 2.00
No. 21—BOLT for attaching No. 16 Plate..... .10
No. 22—SPURS, Slip-Proof Double.. .50
No. 23—BOLT for attaching No. 9 Shoe..... .20
No. 24—RIVET for Cam No. 7..... .10
No. 25—TOE RIVET, hard steel..... .20

GAR WOOD HYDRAULIC BULLDOZERS

For ALLIS-CHALMERS Models

HD-7, WHD-7, HD-10, WHD-10, HD-14

Gar Wood RD-D Bulldozer on Allis-Chalmers HD-14 Tractor

The Gar Wood Bulldozer offers all the advantages of the Gar Wood Trailbuilder with these two exceptions:

(1) End adjustment of the blade is not available because the blade is attached directly to the side frames.

(2) No side casting position of blade as side frames do not have telescoping arrangement.

The blade is operated by means of a valve control lever. Double-acting hoists provide an extra high lift as well as downward pressure on the blade for digging or breaking shale or hard pan. The attachment is mounted in a manner that saves a great deal of wear and tear on the tractor. The lifting mechanism is mounted over the center line of the track frame to avoid eccentric loading. Drawbar of tractor is left clear for drawn tools. Blade cutting edge is reversible and vertical cutters are replaceable. The entire unit can be installed without any alteration in fenders or the necessity of drilling any holes in the side frames for making the attachments. The oil tank, valves and pumps are mounted integral on the rear of the transmission case, leaving sufficient room between the seat and the oil reservoir for the installation of cab and canopy top.

Specifications

Gar Wood Bulldozers for Allis-Chalmers Diesel Tractors

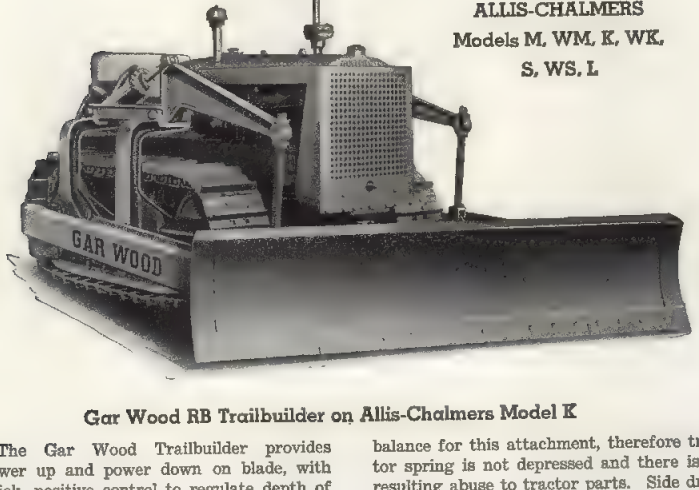
ALLIS-CHALMERS MODEL	HD-7	WHD-7	HD-10	WHD-10	HD-14
GAR WOOD BULLDOZER MODEL	RB-D	RB-DX	RC-D	RC-DX	RD-D
Length of Blade	8'1⅛"	8'7½"	9'1¾"	10'1¾"	10'2"
Height of Blade	32"	32"	36"	36"	40"
Thickness of Blade	¾"	¼"	⅝"	⅝"	⅝"
Lift of Blade	36"	36"	38"	38"	44"
Drop of Blade	12¼"	12⅛"	15"	15"	14"
Cutting Edge (Reversible)	8"x⅝"	6"x⅝"	8"x¾"	8"x¾"	8"x⅝"
Main Frame Boxed Section	8"	8"	9"	9"	10"
Power—2 Hydraulic Hoists	6"x12"	6"x12"	7"x14"	7"x14"	8"x14"
Weight (Approximate)	4700 lbs.	4800 lbs.	6900 lbs.	7100 lbs.	9000 lbs.

Additional parts required on standard tractor—none. Weights and specifications subject to change without notice.

263-8-41

GAR WOOD HYDRAULIC TRAILBUILDERS

For
ALLIS-CHALMERS
Models M, WM, K, WK,
S, WS, L



Gar Wood RB Trailbuilder on Allis-Chalmers Model K

The Gar Wood Trailbuilder provides power up and power down on blade, with quick, positive control to regulate depth of cut at the will of the operator. The blade can be set for both right- and left-side casting positions (with blade at angle of 65 degrees or more with center line of tractor) as well as bulldozing position. All actions of the hoists are self-contained within the attachment members and transferred to the rugged side frames of the tractor. The body of the tractor is not used as a counterbalance for this attachment, therefore tractor spring is not depressed and there is no resulting abuse to tractor parts. Side draft is transferred directly to the track frame. The main side frames of the attachment are of very rugged box construction and are attached to the tractor on the same center as the tractor truck frames, thus placing no restriction to the free movement of truck frames. The cutting edge of the blade is reversible. Shoes are adjustable, and are provided with renewable soles.

Specifications

Gar Wood Trailbuilders for Allis-Chalmers Gasoline Tractors

ALLIS-CHALMERS MODEL	M	WM	K	WK	S	WS	L
GAR WOOD TRAILBUILDER MODEL	RE	RE-X	RB	RB-X	RC	RC-X	RD
Length of Blade	7'8"	8'8"	8'8"	10'2"	10'5½"	11'5½"	11'6"
Height of Blade	25"	25"	25"	25"	30"	30"	35"
Thickness of Blade	¼"	¼"	⅝"	¼"	¼"	⅜"	⅝"
Lift of Blade	30"	30"	40"	40"	48"	48"	33"
Drop of Blade	18"	18"	18"	14½"	21"	21"	22"
Cutting Edge (Reversible)	6"x⅝"	6"x⅝"	6"x⅝"	6"x⅝"	8"x¾"	8"x¾"	8"x¾"
Main Frame, Boxed Section	6"	6"	9"	9"	9"	9"	10"
Power—2 Hydraulic Hoists	6"x8"	6"x8"	6"x12"	6"x12"	7"x12"	7"x12"	8"x14"
Weight (Approximate)	3620 lbs.	3680 lbs.	5080 lbs.	5420 lbs.	6800 lbs.	7300 lbs.	9740 lbs.
Cutting Width (Angling Position)	6'7"	7'10"	7'10"	9'3"	9'5"	10'5"	10'5"
End Adjustment	10"	10"	12"	12"	12"	12"	12"

Additional parts required on standard tractor—none. Weights and specifications subject to change without notice.

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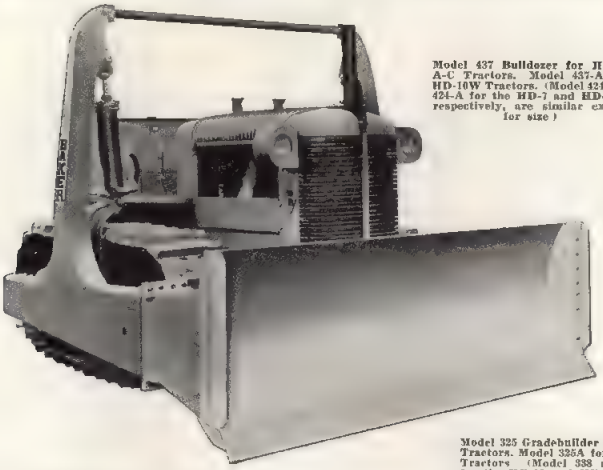
BAKER BULLDOZERS AND GRADEBUILDERS

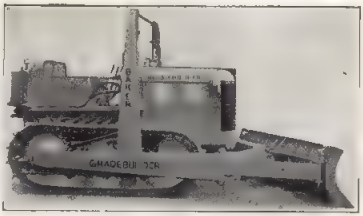


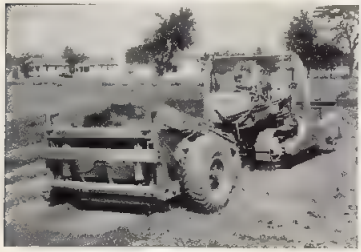
Model 437 Bulldozer for HD-10 A-C Tractors. Model 437-A for HD-10W Tractors. (Model 424 and 424-A for the HD-7 and HD-7W, respectively, are similar except for size.)

Model 325 Gradebuilder for HD-7 Tractors. Model 325A for HD-7W Tractors. (Model 338 and 338A for the HD-10 and HD-10W, respectively, are identical except for size.)

Utility The Baker Hydraulic System, described on Page 5 of this section, provides for maximum utilization of your tractor. In addition to operating hydraulically-controlled front end equipment, it can be used to operate wheeled scrapers, as shown below, and other hydraulic rear-end equipment. Dual controls can be furnished where such operation is contemplated.

Drum hoists for snagging logs, operating yarders, hoisting and other purposes can be mounted at the rear end of the tractor using the power take-off in conjunction with the Baker hydraulic pump, or the pump can be installed in the front and the drum hoist at the rear. You can have the operating advantages and economies of the Baker Hydraulic Bulldozer and a hoist or winch on the same tractor, greatly increasing its utility.





Baker hydraulic system can be used to operate scrapers.

Drum hoist can be mounted on rear end without interference.

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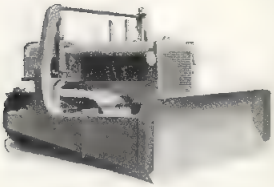
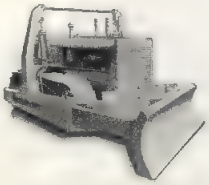
BAKER BULLDOZERS AND GRADEBUILDERS

For Allis-Chalmers L, S, K and M Tractors

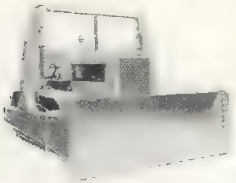
See Specifications
Page 6



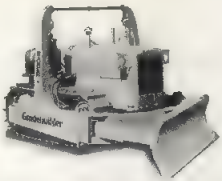
Model 418 Bulldozer for Model L AC Tractor.



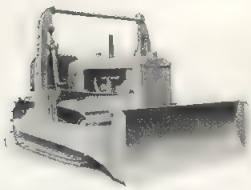
Model 251 Gradebuilder for Model L AC Tractor.



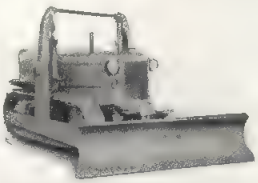
Model 417 Bulldozer for Model S A-C Tractor (Model 417-A for WS).



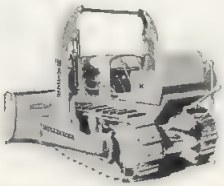
Model 186 Gradebuilder for Model S A-C Tractor (Specify 188 for WS).



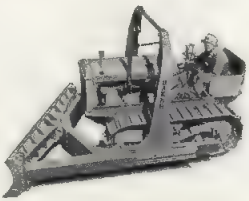
Model 407 Bulldozer for Model K A-C Tractor (Model 407-A for WK).



Model 321 Gradebuilder for Model K A-C Tractor (Specify 321-A for WK).



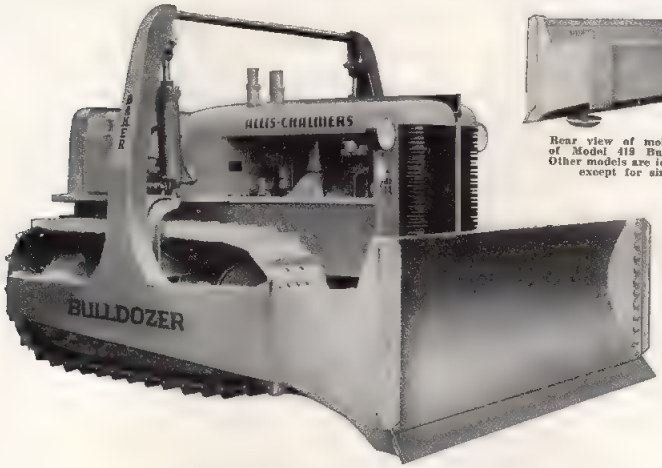
Model 209 Bulldozer for Model M A-C Tractor (Model 209-A for WM).

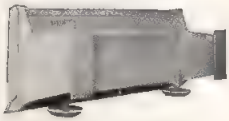


Model 222 Gradebuilder for Model M A-C Tractor (Specify 222A for WM).

98-4-43

BAKER BULLDOZERS AND GRADEBUILDERS





Rear view of moldboard of Model 419 Bulldozer. Other models are identical except for size.

Model 419 Bulldozer for HD-14 Allis-Chalmers Tractor.

Baker Bulldozers

Baker Hydraulic Bulldozers and Gradebuilders are available for all models of Allis-Chalmers crawler tractors, both standard and wide tread. Bulldozer and Gradebuilder moldboards are interchangeable on the same frame and the change-over can be made in a matter of minutes. The Baker's simplicity results in maximum operating efficiency and minimum maintenance costs. Check these features:

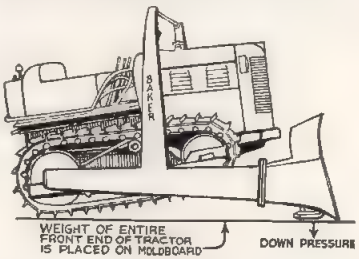
Direct Lift—Twin hydraulic cylinders, one on each side of the unit, provide a direct lifting action. There are no cranks, levers, springs or counterweights. Operator gets instantaneous and positive response.

Tremendous Down Pressure—The weight of the entire front end of the tractor can be exerted on the bulldozer blade. (See sketch at right.) In making a cut, blade does not depend on its own weight alone. This is important when hard, compacted ground is encountered. The hydraulic control insures uniform cuts—keeps blade from "sucking in" and holds it down into the cut.

Moldboard Level on Rough Ground—Pressure in the twin cylinders is automatically equalized, like the level reached by water poured into either side of a "U"-shaped tube. If one crawler goes over a boulder, the cylinder ram over that crawler is forced in and the cylinder ram over the other crawler is forced out. Clean cuts result—no choppy effect—no by-passing of dirt at one side of moldboard—smoother leveling.

Balanced Load on Crawlers—Since the weight of all of the component parts of this bulldozer is carried directly over the center line of the crawlers, there is no excess weight on either front or rear of crawler units and no "toeing out" of crawlers.

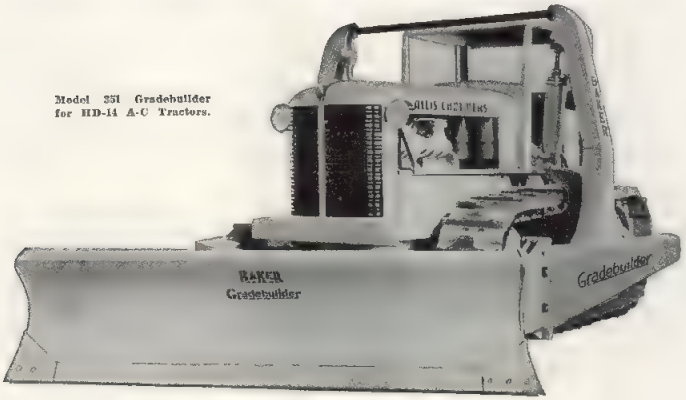
Overhead Tie Bar—The Baker is so constructed that there are fewer stresses on the tractor chassis.



The overhead tie bar integrates the side frames and protects the operator against falling trees or in case of a "spill."

Complete specifications on page 6 of this section.

BAKER BULLDOZERS AND GRADEBUILDERS



Model 251 Gradebuilder for HD-14 A-C Tractors.

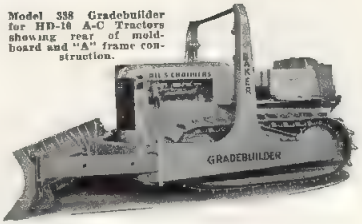
Baker Gradebuilders

Baker Gradebuilders use the same power plant and side beams as the Bulldozer for each model of tractor. The gradebuilding attachment consists of a moldboard, an "A" frame and two struts. The "A" frame is bolted to the ends of the side beams or "pushers." The struts telescope into these side members. The moldboard pivots on the "A" frame and can be used straight across or angled to left or right. It is only necessary to remove a pin in each of the "pushers" and move the struts in or out to change the angle.

All models of Gradebuilders have essentially the same design except the Model 222 for attachment to the A-C Model "M" Tractor. This model employs struts which slide on angles on the outside of the "pushers" instead of telescoping into these side members. (See bottom of page 4, this section.)

The moldboard can be tilted horizontally, too, so that it is either slightly higher or lower at one corner than at the other. Moldboard has renewable corner plates and blade of wear-resistant steel. Back of moldboard has horizontal and vertical reinforcing ribs.

It is only necessary to remove the moldboard, struts and "A" frame and a bulldozer moldboard can be quickly installed.

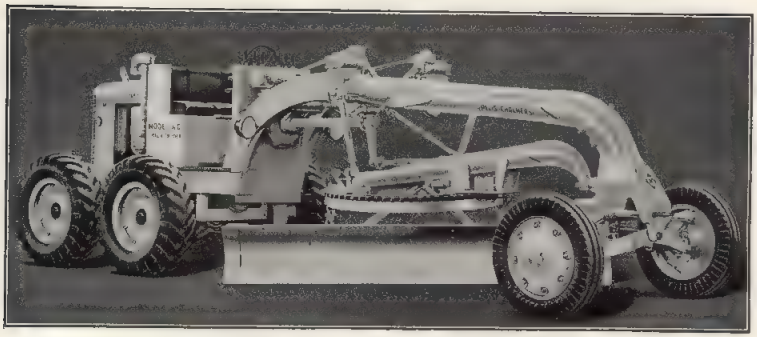


Model 338 Gradebuilder for HD-18 A-C Tractors showing rear of moldboard and "A" frame construction.

Baker Gradebuilders cut trails and roads on hill and mountain sides, gouging out material and casting it to the "down" side. They cut "benches" in open pit metal mines for laying of ore haulage track. Completing of grades and other road work unsuitable for rigid blades is readily accomplished with Gradebuilders

An extension is available which can be bolted across the top of the Gradebuilder moldboard so that it can be used for plowing snow.

ALLIS-CHALMERS "AD" MOTOR GRADER



75 Diesel Horsepower — Tandem Drive

New in design—in construction—in performance—and packed with power, this big heavy "AD" Motor Grader has proved its ability to handle tough grading and construction jobs. Here is a motor grader engineered from the ground up to assure greater earth moving capacity through more clearance under front axle, circle and other operating parts, more power to handle this extra yardage, properly balanced weight and power to insure complete control and maximum traction under all conditions, and adequate blade range to handle all your jobs. The exclusive "Hi-arch" front axle with 22 inches of clearance permits straddling windrows at least 100% larger than any other motor grader made. Not only can you get more dirt under the front axle but more clearance is provided between the "Roll-away" blade and the circle to handle this increased volume of dirt without hanging up in the circle thus absorbing engine horsepower, decreasing travel speeds and increasing fuel consumption.

An entirely new transmission specifically designed for heavy-duty motor grader service has a range of six forward and three reverse speeds under throttle control. Quick, easy action mechanical controls are employed with a low speed set for close adjustments and a high speed set for faster movement. The blade can be revolved a full 360°, and lift cases are mounted directly over the circle for more rigid blade control. Smooth power is supplied by the 3-cylinder General Motors 2-cycle Diesel engine developing 75 brake horsepower. Every down stroke is a power stroke in this 2-cycle engine—twice the number of power strokes as a comparable size 4-cycle engine, therefore delivering as much power as an engine twice its size. The "AD" Motor Grader is a sensational new machine, built big, strong and heavy—to give lasting service—to handle more dirt per round to handle a greater variety of work than you ever thought possible with a motor grader.

Model "AD" Specifications

Weight
Shipping (Approx.), Lbs. 21,500

Roads Speeds—M.P.H.
1st ..... 1.48 to 2.36
2nd ..... 2.20 to 3.52
3rd ..... 3.24 to 5.20
4th ..... 4.80 to 7.70
5th ..... 7.20 to 11.50
6th ..... 10.40 to 16.60
1st Reverse ..... 1.75 to 2.83
2nd Reverse ..... 2.63 to 4.20
3rd Reverse ..... 3.84 to 6.15

Dimensions
Length Over All ..... 24'10⅝"
Width Over All ..... 7'9½"
Height Over All—
With Cab ..... 9'11"
Without Cab ..... 7'9"

Moldboard (Std.)
Shape ..... Involute Curve
Length and Thickness ..... 12'x⅝"
Width ..... 22"

Moldboard Range
Side Shift (Max.) from center position with moldboard extended ..... 40" R & L
Number Positions (Pitch) ..... Five

Moldboard Range (Contd.)
Shift on Moldboard Arms ..... 18" R & L
Lift Above Ground ..... 17½"
Bank Cutting Angle ..... 90°
Maximum Reach Outside Front Wheels ..... 5'7⅛"

Blade Pressure (Moldboard Normal to Center Line)
Without Scarifier—lbs. 10,000
With Scarifier—lbs. 12,190

Circle
Diameter ..... 63"
Section Shape and Size—Angle 6"x4"x1"
Degrees Turn 360

Drawbar
Size Main Pipe ..... 7" Ex. Strong
Size Cross Pipe ..... 5" Ex. Strong
Circle Supports ..... Fully Adjustable

Frame
Head Casting ..... Steel
Pipe ..... 10" Ex. Strong
Pipe Weight per Foot—lbs. 54.7
Channels ..... 10"—37 lbs. per ft. Welded Box Section

Section Modulus (Vertical)
Pipe 39.43
At Lift Supports ..... 86.
Channel Box Sec. Each ..... 39.

Front Axle
Construction Welded Steel Truss Type
Wheel Lean—Degrees 30
Clearance at Centerline ..... 23"

Tandem Drive Housings
Construction ..... Welded Box
Drive ..... Chain

Tire Size—Front
Standard ..... 7.50-24"
Special (Extra Cost) ..... 9.00-24"

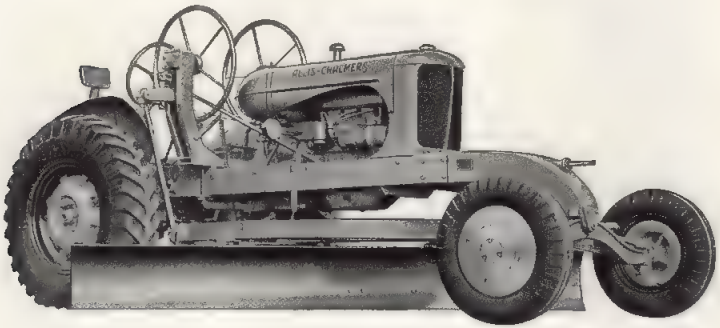
Tire Size—Rear
Standard ..... 12.75-24"

Engine
Make ..... General Motors, Model 3-71
Brake H.P., Max. 75
Fuel ..... Diesel
Number Cylinders 3 (2-cycle)
Bore and Stroke ..... 4¼"x5"
Piston Displacement—cu. in. 212.69
R.P.M. 1600
Piston Speed—ft. per min ..... 1333 at 1600 R.P.M.
Lubrication ..... Pressure

Capacities
Fuel Tank—gallons 43
Cooling System—gallons 6
Crankcase—quarts 16
Transmission—quarts 8

28-9-41

ALLIS-CHALMERS W-SPEED PATROL



For Low-Cost Grading, Maintenance and Construction

The W-Speed Patrol was designed to meet the need for a low-priced road grading and maintenance machine capable of doing light construction work. Costing one-third as much to own and operate as a larger motor grader, the W-Speed Patrol is used by many public bodies for all grading and maintenance work—releasing the heavy motor graders for the use on heavy construction work. Contractors find it an economical tool for finishing and grading around paving forms and to keep hauling roads smooth. Because of its short turning radius and compact design, enabling it to work in close quarters, cities find the W-Speed Patrol handy for maintaining unpaved streets, playgrounds and alleys. Ditching and terracing can be easily handled with the adjustable moldboard which permits cleaning and maintaing ditches thirty inches deep and cutting two-foot ditches through average soil conditions.

To prevent operator fatigue all controls are located within easy reach. Electrical starting and lighting equipment is standard, and the starter as well as the choke are operated from the comfortable driver's seat. Extra attachments for the W-Speed Patrol include a street broom, snow plow, scarifier and belt pulley. The drawbar is always free for a variety of other work such as pulling rippers, scarifiers, harrows and rotary scrapers.

The 31 horsepower engine has the power to lug on heavy loads or speed upon light maintenance. Easily installed cylinder liners, a sensitive governor, valve seat inserts, and gas, oil and air filters give this economical engine years of dependable service. Over 104,000 of these tractors are in service which is your assurance of a dependable unit at a reasonable price.

Specifications

Weight
(Approx. lbs.)
Total weight — 5,960
On front wheels — 1,820
On rear wheels — 4,140

Blade Pressure
Lbs. — 4,780

Dimensions
Overall length — 13' 3"
Overall width (Min.) — 7' 7"
Overall height — 6' 1"
Wheelbase — 10'

Turning Radius
Outside front wheel (without brakes) — 20' 4"

Speed
M.P.H.
Low — 2½
Second — 3¾
Third — 5
Fourth — 9½b 10½a
Reverse — 2

Moldboard
(Adjustable Pitch)
Length—feet — 10
Height—inches — 13½
Thickness—inch — ⅝
Moldboard angularity (Max.) — 46°
Blade clearance—inches — 9
Ground penetration—inches — 5

Drawbar
Size of members — 4x4x½ Angles
Height from bottom of drawbar to cutting edge — 15½"

Lifting Mechanism
Manually operated worm and gear sector
Adjustable ball and socket connecting link
Diameter of handwheels—inches — 22
Distance between handwheels—inches — 25

Engine
No. of cylinders — 4
Type — Vertical valve-in-head
Bore—inches — 4
Stroke—inches — 4
R.P.M. — 1300
Diameter of crankshaft—inches — 2½
No. of main bearings — 3
Fuel — Gasoline

Fuel Supply
Tank capacity—gallons — 15
Feed — Gravity

Wheels
Type — Cast
Rims — Drop Center

Tires
Front (4 ply) — 6.00x16
Rear (6 ply) — 11.25x24

Electrical Equipment
6-volt battery (95 amp. hour minimum)
Starter, generator, and lights.
Note: Starter and choke operated from driver's seat.

b At full load rated engine speed—1,300 R.P.M.
a Light load, engine on governor at approx. 1,475 R.P.M.

28-11-41

ALLIS-CHALMERS INDUSTRIAL WHEEL TRACTORS

Model "A"

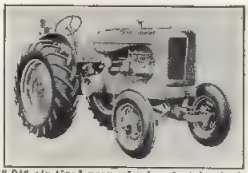
The Model "A" is a big, powerful wheel tractor with 41.5 drawbar horsepower. Powered by a 4-cylinder 4¾"x 6½" valve-in-head gasoline engine, this tractor is also available with a distillate burning engine having a 5" bore and 510.5 cu. in. displacement. Standard equipment includes 7.50x18 front tires, 13.60x28 rear tires, radiator curtain and a clutch type belt pulley. The 13" belt pulley has 8½" face and operates at 900 r.p.m. giving a belt speed of 3,060 ft. per min. Rear wheel weights, power take-off and electric starting and lighting equipment are available.

SPECIFICATIONS

Drawbar Horsepower	41.5
Belt Horsepower	50.5
Shipping Weight (Approx. lbs	7060
Speeds (M.P.H.) and Drawbar Pulls (lbs.)*	
First	2⅝ 4635
Second	3⅞ 4840
Third	5⅞ 3885
Fourth	10¼ 1745
Reverse	3¾
Engine	
Number of cylinders	4
Bore—	
Gasoline	4¾
Distillate	5
Stroke	6½
Displacement—	
Gasoline	460.7
Distillate	510.5
Governed speed	1000
Dimensions	
Wheelbase—inches	80⅜
Over-all length—inches	140
Over-all height—inches	76½
Over-all width—inches	77
Ground clearance—inches	10½
Capacities	
Cooling system—gallons	11½
Crankcase—qts.	14
Fuel tank—gallons	28

* Base on operating weight of 3640 lbs.

Model "WF"



The Model "WF" is a versatile wheel tractor featuring economical power. Over 104,000 of these tractors have been built assuring you a dependable unit at a reasonable price. Standard equipment includes 5.50"-16" air tired front wheels, 11.25"-24" air tired rear wheels, electric starting and lighting equipment, radiator screen and 9" belt pulley with 6" face running at 1170 r.p.m. Rear wheel weights and a power take-off are available as extra equipment.

SPECIFICATIONS

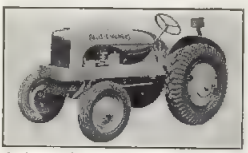
Drawbar Horsepower	23.70
Belt Horsepower	31.43
Weight—lbs. (Approx.)	3400
Speeds (M.P.H.) and Drawbar Pulls (lbs.)	
First	2½ 2800
Second	3⅝ 2722
Third	5 2017
Fourth	9⅝ 976
Reverse	3
Engine	
Number of cylinders	4
Bore—inches	4
Stroke—inches	4
Governed speed—r.p.m.	1300
Dimensions	
Wheelbase—inches	76
Over-all length—inches	127
Over-all width—inches	57½
Over-all height—inches	57⅞
Ground clearance—inches	10
Turning radius—feet	9¾
Capacities	
Cooling system—gallons	4
Crankcase—qts.	6
Fuel tank—gallons	15

Model "IU"

The Model "IU" is a fast, powerful wheel tractor that can handle a variety of hauling and road building jobs at a low cost. The valve-in-head engine burns gasoline, kerosene or distillate. A variety of tire equipment is available to fill every tractor problem. Special attachments for the "IU" include arc-welders, air compressors, street brooms, bulldozers, hoists, cranes, front end loader, pumps, mowers and other auxiliary tools. Extra equipment is available including belt pulley, power take-offs, electric starting and lighting equipment, rear wheel weights, cab and two higher speed ratios.

SPECIFICATIONS

Drawbar Horsepower		31.80
Belt Horsepower		39.54
Shipping Weight—lbs. (Approx.)		4990-8300
Speeds (Standard)—Two higher ratios available		
	Miles Per Hour at 1,200 R.P.M.	**Miles Per Hour at 1,800 R.P.M.**
First	2½	4
Second	3½	6½
Third	4½	8¼
Fourth	11¼	16¾
Reverse	3	4½
Engine		
Number of cylinders		4
Bore—inches		4½
Stroke—inches		6
Displacement—cu. in.		318
Governed speed—r.p.m.		1200
Dimensions		
Wheelbase—inches		76
Over-all length—inches		1[illegible]½
Height—inches		[illegible]
Over-all width—inches		
Single		89½
Dual		89
Ground clearance—inches		9
Capacities		
Cooling system—gallons		6
Crankcase—qts.		10
Fuel tank—gallons		24



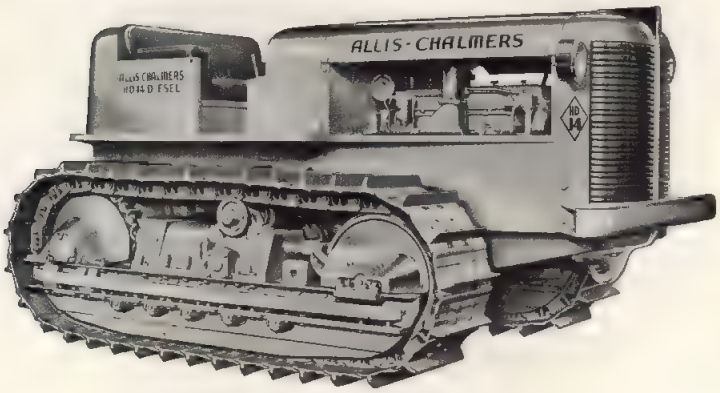
Model "IB"

The "IB" is low, short and powerful—built to handle all types of industrial work. The short wheelbase and hand brakes make maneuvering easy in the narrow aisles and cramped quarters of plants, yards and docks. A high compression gasoline engine gives 13.5 h.p. at the drawbar sufficient to economically handle large loads at high speeds. Special equipment includes structural steel frame, pusher plate, weatherproof cab, power take-off and belt pulley, electric lighting equipment and starter. Extra attachments—highway mower, V-type or straight blade snow plows, street sweeper and air compressor—are available to further increase the usefulness of the "IB".

SPECIFICATIONS

Drawbar Horsepower		13.6
Belt Horsepower		16.3
Weight—lbs.		2140
Speeds (M.P.H.) and Drawbar Pulls (lbs.)		
	1400*	1800†
First	2½	3¼ 1406
Second	4	5¼ 1382
Third	7¾	10 684
Reverse	3	3¾
Engine		
4-cylinder, valve-in-head, 3¼" bore by 3½" stroke		
1400 r.p.m.—rated engine speed. Equipped with muffler.		
Over-all Dimensions		
Wheelbase—inches		57 7/16
Length—inches		96
Width—inches		52¾
Height—inches		54½
Ground clearance—inches		13 7/8
Capacities		
Cooling system—gallons		3
Crankcase—qts.		4
Fuel tank—gallons		13

ALLIS-CHALMERS MODEL "HD 14" TRACTOR



Diesel Fuel

The "HD 14", the World's Fastest and Most Powerful Crawler Tractor, introduced two-cycle Diesel power and higher speeds to the crawler tractor field. Here is a tractor with tremendous power and speeds up to 7 m.p.h. which is fully capable of handling 15 to 20-yard scrapers, the largest scrapers when pusher loaded, 12 to 18-foot snow plows, 12 to 20-yard wagons, 12 to 14-foot blade graders, 48-inch elevating graders, logging arches, bulldozers, sheepsfoot tampers, rooters, in fact, any piece of equipment requiring brute power up to 132 drawbar horsepower.

Powered by the 6-cylinder General Motors 2-cycle Diesel engine, which gives a power stroke on every down stroke of the piston, the "HD 14" offers a new feature—throttle control. Instead of shifting gears to slow down, the throttle can be closed to half throttle without loss of drawbar pull. Standard equipment includes electric starting and lights, bimetallic steering cluches and brakes, positive seal truck wheels and front idlers, full width crankcase guard, heavy radiator guard, adjustable radiator shutters, bumper, front pull hook and hour meter. The "HD 14" is delivered fully equipped with no extras to buy. For certain applications requiring special equipment there is a cab, power take-off, pusher plate, rear-mounted headlights, logging guards and a wide selection of track shoes. Featuring tremendous power, high speeds and flexibility of control, the "HD 14" is designed for economy in operation and low maintenance costs.

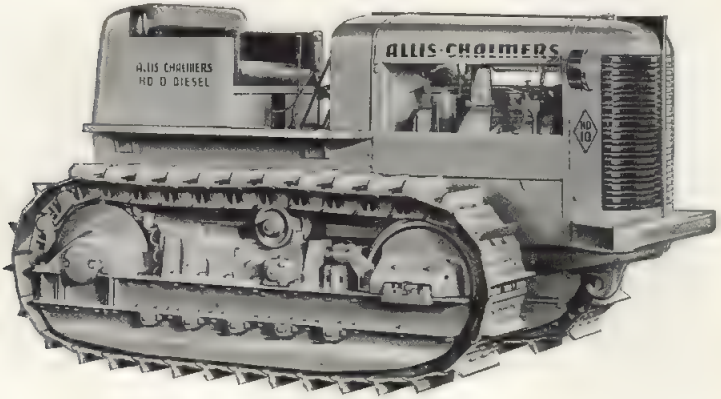
Model "HD 14" Specifications

***Horsepower at Drawbar**	132.19
***Horsepower at Belt**	150.48
Shipping Weight (Approx.), lbs.	28,880
Speeds—M.P.H. (at rated engine R.P.M.)	
First	1.72
Second	2.18
Third	2.76
Fourth	3.50
Fifth	4.36
Sixth	7.09
Reverse—Low	2.09
Reverse—High	3.20
Drawbar Pull	
First	28,019
Second	22,696
Third	17,265
Fourth	13,789
Fifth	10,974
Sixth	8,579
Engine	
Make	General Motors Diesel
Type	Two-Cycle
Fuel	Diesel Fuel
Engine (Contd.)	
Fuel Supplied by	Unit Injectors
Number of Cylinders	6
Bore	4¼"
Stroke	5"
Piston Displacement (cu. in.)	425
R.P.M. Governed at Full Load	1500
R.P.M. at Maximum Torque	800-1200
Piston Speed (ft. per minute)	1250
Lubrication	Forced Feed
Tracks	
Tread (center to center)	63"
Length Track on Ground (center of drive sprocket to center of front idler)	85⅞"
Ground Contact Std. Shoes (sq. in.)	3759
Width of Std. Track Shoe	22"
Height of Grouser	2⅝"
Truck Wheels	
Number—each track	5
Type of Bearing	Tapered Roller
Lubrication	Once Each 200 Hours
General Dimensions	
Over-all Length	13'9"
General Dimensions (Contd.)	
Over-all Height (without stacks)	6'8"
Over-all Width	7'7½"
Ground Clearance	13⅛"
Drawbar Height	15⅛"
Lateral Drawbar Movement	30"
Steering	
Friction Surfaces—each clutch	40
Friction Area—each plate (sq. in.)	78.54
Total Friction Area—each clutch (sq. in.)	3141
Clutch Friction Material	Bi-metallic
Brake Friction Material	Bi-metallic
Capacities	
Cooling System—gallons	12
Crankcase—quarts	14
Transmission Case—quarts	40
Final Drive—each quarts	8
Fuel Tank—gallons	68

*Corrected to sea level barometric pressure and standard temperature of 60° F. (For complete official test of Model "HD 14" tractor, see University of Nebraska Test Report No. 362.)

28-1-41

ALLIS-CHALMERS MODEL "HD 10" TRACTOR



62" and 74" Tread Widths

Diesel Fuel

Developing 86.6 drawbar horsepower, the "HD 10" offers two-cycle Diesel power, two tread widths and many features designed to lower maintenance and operating costs. An ideal bulldozing or pusher tractor with six speeds forward up to 6 m.p.h. and two reverse speeds, the "HD 10" handles scrapers up to 10-yard, 10 to 12-yard wagons, 12-foot blade graders, snow plows, rollers, rippers, logging arches and other construction equipment.

The "HD 10" is equipped, as is the whole Diesel tractor line, with "positive seal" truck wheels and front idlers which require lubrication only once every 200 hours, bi-metallic steering clutches and brakes which have many times the life of ordinary fiber clutch and brake material, and a new track release mechanism which prevents foreign objects from damaging the track or sprocket. The 4-cylinder General Motors 2-cycle Diesel engine represents the finest in Diesel engine design with unit injectors, scientific balancing and full protection through fuel, air and lubricating oil filters. Standard equipment includes electric starting and lights, full width crankcase guard, extra heavy radiator guard, adjustable radiator shutter, bumper, front pull hook, and hour meter—no extras. Certain jobs require additional equipment such as a cab, power pulley, power take-off, pusher plate, rear-mounted headlights, logging guard equipment or special track shoes which are available.

Model "HD 10" Specifications

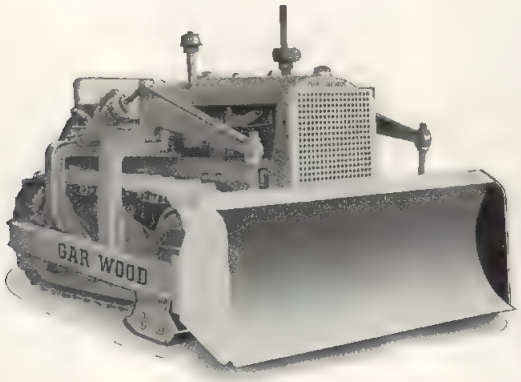
***Horsepower at Drawbar**	86.63
***Horsepower at Belt**	101.63
Shipping Weight (Approx.), Lbs	
74" tread	21,050
62" tread	20,380
Speeds—M.P.H. (at rated engine R.P.M.)	
First	1.69
Second	2.06
Third	2.68
Fourth	3.78
Fifth	4.82
Sixth	6.03
Reverse—Low	1.86
Reverse—High	4.17
Drawbar Pull	
First	19,002
Second	15,507
Third	11,421
Fourth	7,867
Fifth	6,190
Sixth	4,157
Engine	
Make	General Motors Diesel
Type	Two-Cycle
Fuel	Diesel Fuel
Fuel Supplied by	Unit Injectors
Engine (Contd.)	
Number of Cylinders	4
Bore	4¼"
Stroke	5"
Piston Displacement (cu. in.)	284
R.P.M. Governed at Full Load	1600
R.P.M. at Maximum Torque	800-1200
Piston Speed (ft. per minute)	1333
Lubrication	Forced Feed
Tracks	
Tread—	
Wide track	74"
Standard track	62"
Length of Track on Ground (center of drive sprocket to center of front idler)	77½"
Ground Contact Std. Shoes (no. in.)	2775
Width of Std. Track Shoes	18"
Height of Grouser	2½"
Track Wheels	
Number each track	5
Type of Bearing	Tapered Roller
Lubrication	Once Each 200 Hours
General Dimensions	
Over-all Length	12'6"
Over-all Height (without stacks)	6'5¾"
General Dimensions (Contd.)	
Over-all Width—	
74" tread	7'10¾"
62" tread	6'10¼"
Ground Clearance	11⅝"
Drawbar Height	14⅝"
Lateral Drawbar Movement	32"
Steering	
Friction Surfaces—each clutch	80
Friction Area—each clutch (sq. in.)	81
Total Friction Area—each clutch (sq. in.)	2421
Clutch Friction Material	Bi-metallic
Brake Friction Material	Bi-metallic
Capacities	
Cooling System—gallons	9¾
Crankcase—quarts	13
Transmission Case—quarts	24
Final Drive—each—quarts	8
Fuel Tank—gallons	44

*Corrected to sea level barometric pressure and standard temperature of 60° F. (For complete official test of Model "HD-10" tractor, see University of Nebraska Test Report No. 361.)

28-2-41

GAR WOOD HYDRAULIC BULLDOZERS

For ALLIS-CHALMERS Models M, WM, K, WK, S, WS, L



Gar Wood RB-D Bulldozer on Allis-Chalmers Model K

The Gar Wood Bulldozer has rugged strength without surplus weight. Powerful double acting hydraulic hoists, one for each side, are attached directly to the side frames. By shifting one valve control lever alongside the operator's seat, the blade is raised or lowered with speed and precision. The bulldozer attachment is mounted on the tractor in a manner that does not place undue strain on the transmissions, clutch or other tractor parts. All actions of the hoists are self contained within the attachment members and transferred to the rugged side frames of the tractor. The attachment pushes through the rigid steel side frames of box construction which are attached to the tractor on the same center as the tractor truck frames, thus placing no restriction to the free movement of truck frames.

Note that the tractor drawbar is in the clear so that drawn tools can also be handled. The bulldozer has renewable and reversible cutting edge bolted to the blade. Shoes are provided with renewable, adjustable soles. The oil tank, valves and pumps are mounted integral on the rear of the transmission case, leaving sufficient room between the seat and the oil reservoir for the installation of cab and canopy.

Specifications

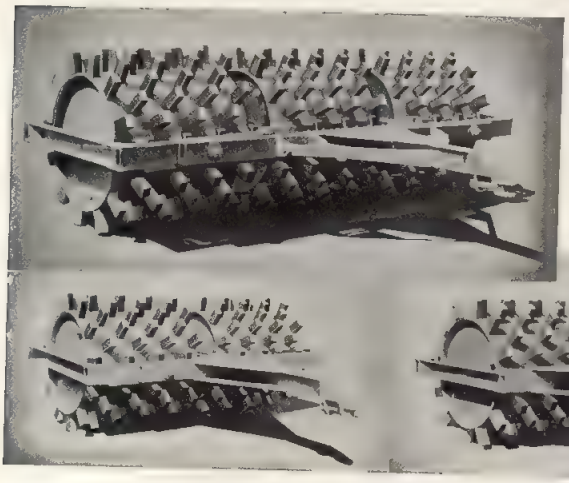
Gar Wood Bulldozers for Allis-Chalmers Gasoline Tractors

ALLIS-CHALMERS MODEL	M	WM	K	WK	S	WS	L
GAR WOOD BULLDOZER MODEL	RE-D	RE-DX	RB-D	RB-DX	RC-D	RC-DX	RD-D
Length of Blade	6′ 0″	7′ 3″	7′ 5″	8′ 10″	9′ 2″	10′ 2″	10′ 9″
Height of Blade	30″	30″	30″	30″	34″	34″	40″
Thickness of Blade	¼″	¼″	¼″	¼″	¼″	¼″	$\frac{5}{16}$″
Lift of Blade	25″	25″	36″	36″	44″	44″	27″
Drop of Blade	14″	14″	13″	13″	19″	19″	20″
Cutting Edge (Reversible)	6″x$\frac{5}{8}$″	6″x$\frac{5}{8}$″	6″x$\frac{5}{8}$″	6″x$\frac{5}{8}$″	8″x$\frac{5}{8}$″	8″x$\frac{5}{8}$″	8″x$\frac{3}{4}$″
Main Frame Boxed Section	6″	6″	9″	9″	9″	9″	10″
Power 2 Hydraulic Hoists	6″x8″	6″x8″	6″x12″	6″x12″	7″x12″	7″x12″	8″x14″
Weight (Approximate)	2990 lbs.	3180 lbs.	4770 lbs.	4880 lbs.	6460 lbs.	6900 lbs.	8050 lbs.

Additional parts required on standard tractor—none. Weights and specifications subject to change without notice.

263-7-41

GAR WOOD SHEEP-FOOT TAMPING ROLLERS



Triple drum, oscillating Gar Wood tamping roller, shown at left, may be quickly converted to double or single drum unit, by interchanging or removing front and rear cross-members.

EVERY WORTH-WHILE FEATURE IS INCLUDED

Gar Wood Sheep-Foot Tamping Rollers enable contractors to pack fills according to any given specifications—and at lowest cost. The sheep-foot roller is far superior to flat rollers because each foot penetrates below the surface and gives solid compaction on bottom layers. Gar Wood sheep-foot tampers are built in a complete line, with interchangeable drums that fill every tamping requirement. Drums are electrically welded steel, with drop-forged steel feet welded to them. Each drum is mounted within a channel frame pivoted on a drawbar at front and rear. Thus each drum can oscillate independently to fit road contours. Stop brackets are provided to prevent one drum from interfering with another. The oscillating shafts operate in very heavy cast iron bushings which provide a large bearing area. The drum shaft turns in special dust-sealed heavy-duty ball bearings to assure smooth, effortless rolling with minimum consumption of tractor power. The feet are specially designed to make a clean, firm tamp without clogging. Cleaning attachments are provided on the front and rear channel frames. The hollow construction of the drums makes it easy to increase the weight simply by filling them with water.

Specifications

TAMPING ROLLER MODEL	WSR61	WSR96	WSR112	WDR128	WDR192	WDR224	WTR192	WTR288	WTR336
Number Drums	1	1	1	2	2	2	3	3	3
Number Feet per Drum	64	96	112	64	96	112	64	96	112
Length Over All	131	131"	131"	145"	145"	145"	145"	145"	145"
Width Over All	56½"	56½"	56½"	113"	113"	113"	172⅛"	172⅛"	172⅛"
Length Tamper Feet	7⅛"	7⅛"	7⅛"	7⅛"	7⅛"	7⅛"	7⅛"	7⅛"	7⅛"
Area Face Tamper Feet (Sq. In.)	6	6	6	6	6	6	6	6	6
No. Feet per Row per Drum	4	4	4	4	4	4	4	4	4
Ground Pres. Sq. In. (Empty)	113 1	134 3	144 3	135	145	155	126 2	146 2	156 2
Ground Pres. Sq. In. (Loaded)	191 8	213 7	221 7	203 7	223 7	233 7	206	225	235
Cleaners	Front and Rear	Front and Rear	Front and Rear	Front and Rear	Front and Rear	Front and Rear	Front and Rear	Front and Rear	Front and Rear
Diameter of Drum	40"	40"	40"	40"	40"	40"	40"	40"	40"
Diameter of Drum Outside Feet	55"	55"	55"	55"	55"	55"	55"	55"	55"
Length of Drum	48"	48"	48"	48"	48"	48"	48"	48"	48"
Type of Frame	Oscilg.	Oscilg.	Oscilg.	Oscilg.	Oscilg.	Oscilg.	Oscilg.	Oscilg.	Oscilg.
Domestic Shipping Weight	2715	3235	3475	6590	6960	7440	9100	10540	11026

263-6-42

BAKER BULLDOZERS AND GRADEBUILDERS

HYDRAULIC SYSTEM

The easy and accurate control of the blade on Baker Bulldozers and Gradebuilders is due to the unusually efficient hydraulic system installed on the tractor. The hydraulic valves and pumps used were chosen because of their peculiar adaptation to Bulldozer operation.

The pump is a high-pressure rotary type with hardened gears and special tooth sections. The plates are reversible and renewable. The shafts are hardened and ground. The bearings are oversized. The pump is regularly mounted at the rear to connect with the engine transmission, except in the case of Model L and HD14 Tractors, where the pump is at the side power take-off.

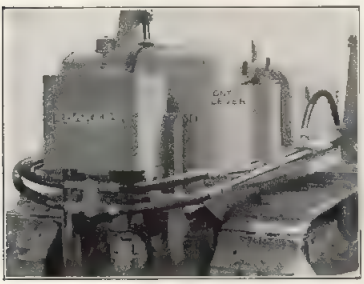
Front pump mounting can be made on all tractors except Model L and HD14. Front mounting is often necessary when a winch or other implement is attached at the rear of the tractor. Typical front pump installation is illustrated above at right.

The hydraulic, four-way valve has two-stage rotors mounted on Timken bearings. The quadrant is built on the valve to insure proper opening of the ports. The valve positions permit holding, raising, lowering, floating, and down pressure on the blade. Float position at each end of the stroke can be cut out by screw adjustment. A relief valve takes care of excess pressure. The new large valve used with increased size of piping and hose greatly reduces operating pressure.

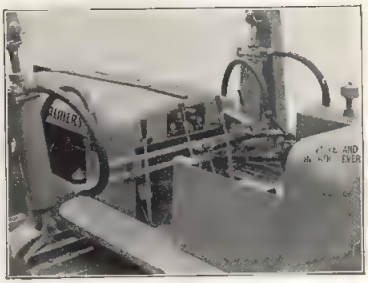
The valve is located above the pump when pump is at the rear, and in the cab on front pump installations. The control lever, in either case, is in the cab at the driver's right.

The fittings and hose arrangements are compact and simple. Without any alterations the supply tank valve and fittings can be mounted on tractors with either cab or canopy. Only the highest grade wire-braid rubber hose is used and excess lengths avoided.

The pump and valve design has been coordinated so that a better balanced hydraulic system is provided and smooth, positive operation assured with least effort.



Above is shown a typical rear pump mounted installation on an Allis-Chalmers Tractor with valve at the rear and control lever conveniently located in the tractor cab.



The illustrations above show a typical front pump mount installation on an Allis-Chalmers Tractor. The valve and control lever are located in the tractor cab.

DUAL HYDRAULIC CONTROL SYSTEMS CAN BE FURNISHED FOR SCRAPER OPERATION

BAKER BULLDOZERS AND GRADEBUILDERS

Specifications

Bulldozers

MODEL	418	419	417	417A	437	437A	407	407A	424	424A	209	209A
Tractor Model	L	HD 14	S	WS	HD 10	HD 10W	K	WK	HD7	HD 7W	M	WM
Approx. Wt. Lbs.*	7475	7400	6000	6125	6395	6590	3645	3850	3815	3965	2357	2464
Overall Length Incl. Tractor—In.	180½	189½	174⅝	174⅝	174⅝	174⅝	150½	150½	150½	150½	129	129
Moldboard Lgth, In.	122½	122½	110½	122⅛	110½	122½	86	101	90	101	75⅛	85½
Moldboard Hght, In	45	45	41	41	41	41	39	39	39	39	28	28
Cutting Edge	⅝x6	⅝x6	⅝x6	⅝x6	½x6	½x6	½x6	½x6	½x6	½x6	½x6	½x6
Lift Above Ground, Inches	35⅛	35⅛	40	40	40	40	42⅜	42⅜	42⅜	42⅜	24	24
Drop Below Ground, Inches	14⅜	14⅜	15	15	15	15	13	13	13	13	10	10
Cylinder Size, In.	6x19	6x19	5x19	5x19	5x19	5x19	5x19	5x19	5x19	5x19	4x12	4x12

*Weights are for standard rear or side pump mounting.

Gradebuilders

MODEL	351	251	338	338A	186	183	325	325A	321	321A	322	222A
Tractor Model	HD 14	L	HD 10	HD 10W	S	WS	HD 7	HD 7W	K	WK	M	WM
Approx. Wt., Lbs.*	8315	8305	6472	6686	6005	6418	4018	4164	3904	4050	2680	2763
O.A. Length (in.) Incl. Tractor	202	202	187	187	183	183	159	159	155	155	130	130
Moldboard Lght, In.	148	148	133	146	133	146	116	124	112	124	95	106
Moldboard Hght., In.	34	34	32½	32½	32½	32½	28	28	28	28	24	24
Cutting Edge	⅝x6	⅝x6	⅝x6	⅝x6	⅝x6	⅝x6	½x6	½x6	½x6	½x6	³/₁₆x6	³/₁₆x6
Lift Above Ground	38	38	42	42	42	42	43	43	43	43	24	24
Drop Below Ground	13½	13½	14	14	14	14	14	14	14	14	10	10
Angle, Blade to C. L. Tractor	65°	65°	65°	65°	65°	65°	65°	65°	65°	65°	65°	65°
Vert. Adj. at End Blade	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"
Cyl Size, Inches	6x.9	6x19	5x19	5x19	5x19	5x19	5x19	5x19	5x19	5x19	4x12	4x12

VALVE (All Models)—Two stage rotors mounted on Timken Bearings. Quadrant built on valve to insure proper opening of ports. Float position at each end of stroke can be cut out by screw adjustment.

PUMP (All Models)—Rotary Gear Pump with hardened gears and special tooth sections. Reversible and renewable end plates. Hardened and ground shafts and oversize bearings.

*Weights are for standard rear or side pump mounting.

Baker Model 244 Bulldozers for Model "WF" A-C Tractors

A small, practical bulldozer with hydraulic controls and pump similar to that used on the crawler tractors is available for the Model "WF" tractor. Ideal for use in close quarters where a larger unit is not economical and for snow removal, plant floor and yard clean-up, scrap piling, helping shovels to load, strip mine clean-up, leveling at city dumps, backfilling on municipal work, and scores of other jobs.

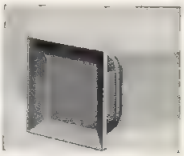
General Specifications

Moldboard is 24" x 66"
Cylinders: 3" bore, 8" stroke.
Lift Above Ground 12½".
Drop Below Ground: 6".
Blade: Reversible and Renewable.
Approximate Weight: 1105 lbs.

Pusher Attachments

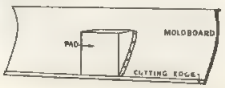
Attachments for use in pushing scrapers and other equipment can be furnished for use with Baker Gradebuilder "A" frames. The pusher plate is attached at the point of the Gradebuilder "A" frame after the moldboard and struts are removed.

A pusher attachment or tree dozing pad is also available for bolting to bulldozer moldboard.



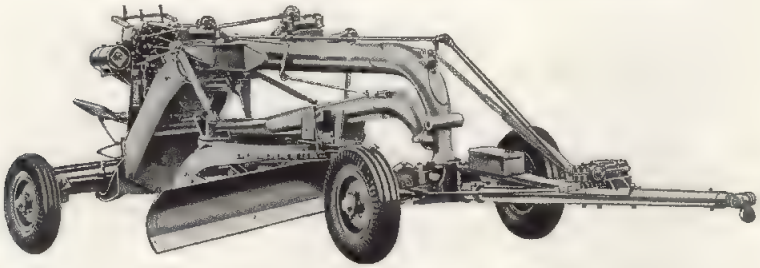
Pusher Attachment for use on "A" frame.

Pusher for attachment to Bulldozer moldboard is shown below.



98-6-43

ALLIS-CHALMERS LEANING FRAME GRADERS



Two Sizes—Power Controlled

Allis-Chalmers Leaning Frame Graders are built in two sizes: the 110 to handle a 10'-12' moldboard and the 112 to handle a 12'-14' moldboard. Both are power controlled and are available with either steel wheels or pneumatic tires.

The Leaning Frame is an exclusive A-C feature which more than doubles the capacity of the grader. It permits a much wider range of blade positions; assures stability in all operating positions; permits shifting the grader's weight where required; and provides the operator with one lever control over a wide variety of operations. In addition it supplies the operator with a comfortable level platform in all operating positions, thereby contributing to increased daily production.

Other advantages of the A-C grader are: its low line of draft; the sturdy tubular frame; the inverted draft ball connection; the centrally mounted lift gear cases; the uniform front and rear wheel sizes; the extra wide circle, and the easy operating control box.

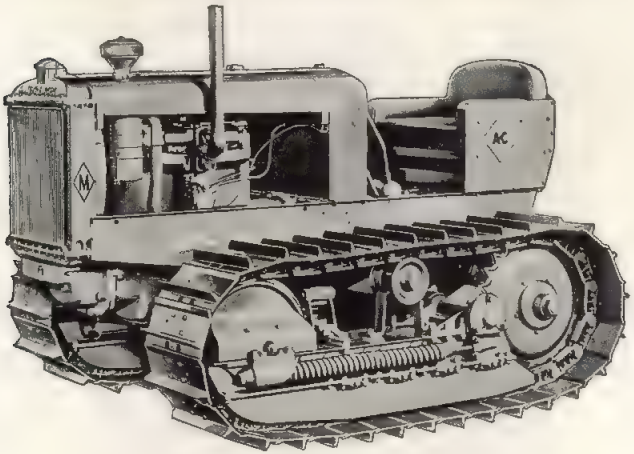
Specifications

	Model No. 110	Model No. 112
Weight		
Pneumatic wheels	9,800 lbs.	12,400 lbs.
Steel wheels	10,100 lbs.	12,600 lbs.
Over-all Dimensions		
Length with pole	28' 9"	31' 8"
Length without pole	18' 10"	20' 1"
Width less blade	8' 11½"	10' 6"
Height	7' 9"	7' 11"
Wheelbase	15' 8"	17' 7"
Tread		
Front	5' 1"	5' 6"
Rear	7' 9"	8' 6"
Moldboard		
Length and thickness (Std.)	10' 0"x⅜"	12' 0"x⅜"
Width (straight across incl. cutting edge)	19⅛"	22"
Moldboard Range		
Pitch adjustment in ins.	7"	7"
Number of positions	5	5
Shift on moldboard arms	12" R. & L.	13" R. & L.
Lift above ground	18"	18"
Bank cutting angle	90°	90°
Maximum side reach outside front wheels	5' 5"	6' 11"
Circle		
Diameter	4' 7⅝"	5' 3"
Degrees of turn	180°	180°
Lifting Mechanism		
Type (enclosed)	Worm and gear	Worm and gear
Diameter lift shaft	2¾"	3⅛"
Range of cranks	360°	360°
Drawbar		
Size main pipe	7" E. S.	8" dbl. ex. str.
Size cross pipe	5" E. S.	6" E. S.
Frame		
Head casting	Steel	Steel
Pipe	9" E. S.	10" E. S.
Channels	9"-25.4 ship chan.	10"-28.3 ship chan.
Lean (each way from vertical)	25°	25°

	Model No. 110	Model No. 112
Frame (Contd.)		
Width channels at rear	32"	36"
Section modulus (vertical)		
Pipe	31.9	39.4
Channels (2)	33.8	46.8
Combined at lift hsg.	53.9	75.6
Draft Ball		
Size	8"	8"
Height from ground	27"	29"
Mounting	Socket in frame	Socket in frame
Front Axle		
Angle size (2)	4"x3"x½"	4"x3"x⅝"
Length spindle arm	9"	9"
Wheel lean in degrees	20°	20°
Clearance	15¼"	15¼"
Rear Axle		
Pipe size	8"	7"
Shift	2' 8"	3' 0"
Wheel lean in degrees	20°	20°
Clearance	19¼"	20"
Front and Rear Steel Wheels (Std.)		
Diameter	36"	38"
Size tire	7"x¼"	8"x⅜"
Bearings	Tapered roller	Tapered roller
Front and Rear Pneumatic Wheels (Optional)		
Type of wheel	Disc	Disc
Size of tire (rib grader type)	7.00-20"	8.25-20"
Power Unit		
Make	Wisconsin	Wisconsin
Number cylinders	One	One
Horsepower	5.4	6.1
Scarifier		
Weight (lbs.)	1300	1630
Number teeth	7	9
Size of teeth	3"x1"	3"x1"
Width of cut	3' 1"	4' 1"

28-8-41

ALLIS-CHALMERS MODEL "M" TRACTOR



40" and 50" Tread Widths

Gasoline, Butane, Low-Grade Fuels

The Model "M" is built to fit the need for a small yet powerful tractor that can handle a variety of construction, industrial and agricultural jobs at a low cost. Special equipment including bulldozers, trailbuilders, front end shovels, compressors, pumps, scrapers, winches and other auxiliary tools enable the Model "M" to handle almost any job. And with speed, maneuverability and power this tractor is a real jack-of-all-trades. The valve-in-head engine burns gasoline, butane or low-grade fuel and has removable cylinder sleeves, inserted valve seats and full pressure lubrication. These modern engine features plus positive-seal truck wheels, carburized and hardened alloy steel gears and oversize steering clutches and brakes cut maintenance costs to a minimum. The wide tread Model "WK" provides better balance for working on hillsides or steep grades and permits the use of wider track shoes for positive traction where tractive conditions are poor. Ample power and traction is available in the Model "M" to handle scrapers up to 3 yards capacity, 2 to 4-yard wagons, 6 to 8-foot blade graders, logging dollies and rollers.

Models "M" and "WM" Specifications

***Horsepower at Drawbar** 32.77
***Horsepower at Belt** 39.54

Shipping Weight (Approx.), Lbs.
50" tread 6,970
40" tread 6,760

Speeds—M.P.H. (at rated engine R.P.M.)
First 1.82
Second 2.23
Third 3.20
Fourth 4.15
Reverse 2.55

Drawbar Pull—Max. Lbs. (at rated engine R.P.M.)
First 5,899
Second 5,465
Third 3,438
Fourth 2,428

Engine
Make ..... Own
Type ..... Valve-in-Head
Fuel ..... Low Grade or Gasoline
Number of Cylinders 4

Engine (Contd.)
Bore ..... 4½"
Stroke ..... 5"
Piston Displacement (cu. in.) 318
R.P.M. Governed at Full Load 1200

Tracks
Tread—
Wide track ..... 50"
Standard track ..... 40"
Length Track on Ground (center of drive sprocket to center of front idler) ..... 56⅛"
Ground Contact—Std. shoes (sq. in.) 1353
Width of Std. Track Shoes ..... 12"
Height of Grouser ..... 1⅝"

Truck Wheels
Number—each track 4
Type of Bearing ..... Tapered Roller
Lubrication ..... Once Each 200 Hours

General Dimensions
Over-all Length ..... 8'5⅝"
Over-all Height ..... 4'8⅛"

General Dimensions (Contd.)
Over-all Width—
50" tread ..... 5'7¼"
40" tread ..... 4'9⅛"
Ground Clearance ..... 8⅞"
Drawbar Height ..... 9½"-12¾"
Lateral Drawbar Movement ..... 23"

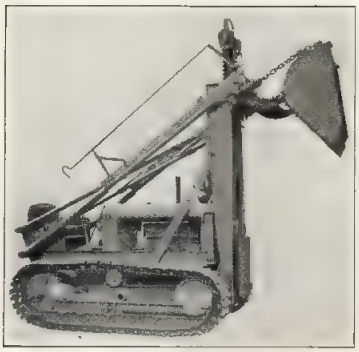
Steering
Friction Surfaces—each clutch 16
Friction Surfaces—each plate (sq. in.) 43.18
Total Friction Area—each clutch (sq. in.) 690.9

Capacities
Cooling System—gallons 6
Crankcase—quarts 10
Transmission Case—quarts 12
Final Drive—each—quarts 5
Fuel Tank—gallons 24

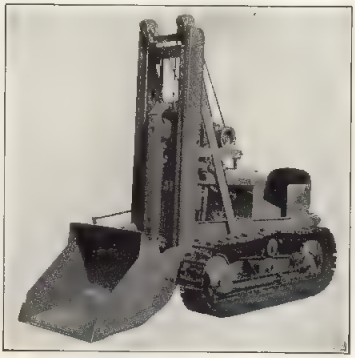
*Corrected to sea level pressure and standard temperature of 60° F.

28-7-41

Hough Shovel for Allis-Chalmers Model WM Tractor



Model WM—Hydraulically operated.



Model WMX—Cable-operated.

This Heavy-Duty Shovel, now available hydraulically operated or with mechanical cable control, will dig any kind of solid dirt, clay, gravel, etc., and load into trucks at the rate of 30 to 40 yds. per hour. It will load from stock piles at the rate of 40 to 50 yds. per hour. It will load snow, charge concrete mixers, trim shoulders, dig basements, handle cut and fill work, handle, load or transport any bulk materials such as fertilizer, chemicals, coal, snow, cement, etc.; it will backfill or spread, and it will do all these things day-in and day-out with the utmost economy. At all times the tractor can be used for drawbar work, and it can move or be moved quickly and easily from one job to another

These Model "WM" or Model "WMX" Shovels are low-priced and proved machines. Any tractor driver can become an expert operator within a few days. The gasoline consumption is less than a gallon and a half per hour. The complete machine is a thoroughly engineered unit; this Model "WM" Allis-Chalmers Tractor was designed and is built only for our shovel and this model shovel was especially engineered, developed and designed for this particular tractor.

Hough Tractor Shovels are steadily replacing or supplementing the big swinging-boom shovels on great many jobs, because of the many different kinds of work they can do; because of their low operating cost and because they are so easily and quickly moved from one job to another.

Specifications Hydraulically Operated

DUMPING CLEARANCE—7'.
BUCKETS—42"—½ yd., or 66"—1 yd.
OVER-ALL HEIGHT 9'.
OVER-ALL LENGTH—12'10"
OVER-ALL WIDTH—66".

PUMP—Positive displacement multi-vane type; connected direct to engine crankshaft through self-aligning spline fitting.

CONTROL VALVE Three-way type, operated direct from driver's seat.

CYLINDER—Thoroughly ground and honed. Piston is cast iron, fitted with piston rings Telescopic chrome leather boot protects piston rod against dust. Raising time about 10 seconds; lowering time about 3 seconds.

WEIGHT—Shovel, 3 450 lbs.. Tractor Weight, 7,800 lbs.; Total Weight, 11,250 lbs.

EXTRA EQUIPMENT—Bucket teeth; straight and angling Backfiller Blades. Shipped complete from Springfield, Illinois.

Specifications Cable-Operated

DUMPING CLEARANCE—7'.
BUCKETS—42"—½ yd., or 66"—1 yd.
OVER-ALL HEIGHT 9'9"
OVER-ALL LENGTH 11'2".
OVER-ALL WIDTH 66".

HOIST—Drives from front engine P. T. O. through enclosed bevel gear boxes and propeller shaft to enclosed clutch and brake located above engine. Automatic cable take-up to prevent cable overwind. One-lever control to raise, hold or lower, oversize clutch and brake bands. Raising time, 5 seconds, lowering, 3 seconds.

WEIGHT—Shovel, 3,700 lbs.; Tractor Weight, 7,800 lbs., Total Weight, 11,500 lbs

EXTRA EQUIPMENT—Bucket teeth; straight and angling Backfiller Blades. Shipped complete from Springfield, Illinois.

166-1-43

HOUGH BACKFILLER AND BUGGY ATTACHMENTS

Straight Backfiller.

Backfiller

For Model "WM" or Model "WMX"

The above illustration shows the machine with the Bucket removed and the Backfiller Blade attached. It may be installed in a very few minutes, and is attached to the boom arms by the same two pins by which the Bucket is attached. Thus, with this additional attachment, the owner has a two-purpose machine—both a Shovel and a Bulldozer, or in the case of the Reversible Blade, an angle Bulldozer

Specifications

Straight Backfiller

HEIGHT—36".
LENGTH—72".
THICKNESS—½" rolled plate.
CUTTING EDGE—½" thick reversible high carbon steel.
WEIGHT—550 lbs.

Specifications

Reversible Backfiller

HEIGHT—28".
LENGTH –84".
THICKNESS—⅜" rolled plate.
CUTTING EDGE—½" thick, reversible, high carbon steel.
WEIGHT—800 lbs.

Transport Buggy

Here is a development which provides quick and safe means of transporting the "WM" Tractor and Shovel from job to job and for any distance.

The Transport Buggy consists of a drawbar pole and two pneumatic tire wheels to which are permanently mounted the stub axles with Timken Bearings.

The whole Transport Buggy can be attached to, or detached from the Tractor in a matter of ten minutes.

The whole unit is so accurately balanced that one man can lift the entire assembled machine simply by lifting at the end of the pole.

The Transport Buggy eliminates the investment in a trailer and, in most states, also eliminates the yearly trailer license.

The Transport Buggy is safe; it is low-priced and it is so easily and quickly attached that it again multiplies the many uses for the Shovel, because it really converts the machine into a Mobile Unit.

Specifications

Hough Transport Buggy

TIRES—12.75-28 10-ply Goodyear Implement. (Ample capacity to support the 11,000 lb. load).

WHEELS—Electric—Steel Spoke—Timken Roller Bearings.

AXLES—Stub type 3½" diameter. 20" long—special steel

TOW POLE—Fabricated steel with ring on one end for attaching to truck tow hook. Attaches to drawbar of tractor.

WEIGHT—Approximately 750 lbs.

166-2-43

DECOYS—OUTDOOR EQUIPMENT

Armstrong Featherweight Decoys. Life-like, Swim—Light Durable Flat Bottom Waterproof Armstrong featherweight decoys are all life size. Average weight 3 to 3 ounces. Natural wild bird colors. Practical, nondestructible stuffed with Kapoc and Granulated cork. Given reasonable care will last indefinitely. Completely water proofed, new wax process. Because of its light weight it draws less than ¼-inch of water and is constantly in motion, even in the lightest breezes. THEY SWIM." Body hand stitched, conformation and bottom hand sewed. Head neck and breast wood body. Taxidermist eyes. Used on all decoys. Anchoring rings on every bird. Bead, weight or counter, ounce only required in rough water or when decoy is pitched, and then only three ounces attached to anchor ring. Approximate weight per dozen 8½ lbs. Shipped F.O.B. from Texas factory. Your choice of Mallards, Pintails or Blue Bills.
28640. Per dozen **$20.00**

Ace Mallard Decoys. The Ace Mallard Decoys are made of basswood. Are light in weight, have glass eyes. They are the correct size, and realistically painted with waterproof paint. Packed eight hens and four drakes per dozen. Shipping weight approximately 20 lbs.
28641. . . . Per dozen **$14.25**

Ott's Duck Calls Made of All Hard Rubber.—These calls are tried and recommended whenever duck calls are used. Free from metallic sounds. Improved long distance volume—effective clearness and trueness in tone. They are without question the leading and most popular duck calls on the market.
28644. The Perfect Regular Duck Call. Each **$1.68**

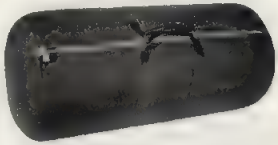
Wood Pulp Decoys. These decoys are manufactured to meet the needs and requirements of the discriminating hunter. They are moulded from cooked wood pulp under very high pressure. They have raised wings, bass wood head and glass eyes. Are made hollow and can be used WITHOUT self righting weights. This decoy is practically indestructible. Very light in weight, and realistically painted with waterproof paint. Packed eight ducks and four drakes per carton. Shipping weight, 20 pounds per carton.
28642. Mallard Decoys. Per dozen **$14.25**

28643. Blue Bill Decoys. Per dozen **14.25**

Shipped F.O.B. direct from Minnesota factory

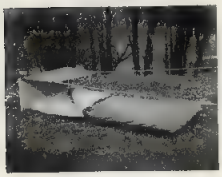
(Right)—**Empire "Twin-Lite" Spot or Flood Electric Lantern.**—An ideal Railroad Lantern heavy duty two light Lantern. One bulb for spotting—the other, flood. Both lights easily controlled from same switch. Heavy plate throughout with nickel and chromium in satin lustre finish. Fool-proof, water-proof, reliable switch. Requires Ever-ready Battery No. 409, or its equivalent. Lantern weight 2½ lbs.
28646. . . . Each **$4.10**

(Above) **Empire "All Position" Electric Lantern.** The "All Position" pivot makes this the most convenient for all purposes. Weather-tight glass lens easily removed. Heavy duty construction. Fool-proof, water-proof switch. Heavy plate throughout. Uses Ever-ready Battery No. 409 or its equivalent. Lantern weight 1½ lbs.
28647. Each **$2.60**



Carry All Duffel Bag. Two genuine cowhide leather handles formed round and padded comfortably at your hand. Stitched and riveted to wide reinforcing bands that extend around the entire bag giving extra support and strength. Ideal for bed rolls and sleeping bags. All the entire camp duffel can be carried in one container. Full length zipper with locking device and padlock. Wide inside protecting shield underneath zipper opening keeps dust or rain from working through to the inside also amphibex closing when loaded full. Color Dark chocolate brown. Heavy filled, waterproof duck. Size 15x29 inches.
28648. Each **$8.50**

TA-PAT-CO SLEEPING BAGS



(Below)

"Rough and Ready." Wherever light, durable, compact sleeping equipment is required, the ROUGH AND READY lives up to its name. Ideal for the man who wants minimum sleeping equipment with maximum comfort.

Outer covering of sturdy strong waterproofed cloth—new olive drab color. Specially prepared filling, properly quilted to prevent bunching. Zipper works over one shoulder and is so constructed to be form fitting about the neck.

Large roomy tent canopy. Provision for Air Mattress. Complete with two strong buckled web straps securely attached to outer cover for convenience in carrying.

Style No. 55. Kapok filled soft flannel lining. Half length zipper. No canopy. No pillow. Very roomy, easy to get in and out. Size 36x81 inches. Weight 8½ lbs. **$23.70**
28649-55.

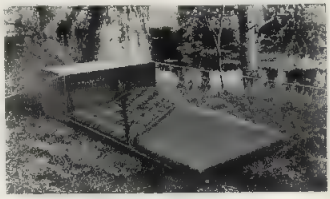
Style No. 55A. Kapok filled, soft flannel lining. Full length zipper down side and across bottom. Complete with pillow. Size 36x81 inches. Weight, 10¾ lbs. **$30.00**
28650-55A.

(Above)

THE "SCOUT & HUNTER"

An All-Round Bag for Grown Ups and Children

Camping out with Dad is one of those never to be forgotten pleasures of boyhood that forges unbreakable links into the chain of comradeship between father and son. The very moderate price of this bag makes it possible for every boy to be the camp buddy of his Dad and enjoy the thrill of sleeping outdoors under the stars. With the thought in mind that the comforts of outdoor camp sleepers, veteran hunters and outdoorsmen was sought in designing the SCOUT AND HUNTER. It is light weight, practical, comfortable and ideal for summer and entire year round use. It can also be used as a quilt for heavy blanket when opened out. The top closes by means of a drawstring. Large brass grommets in each corner of the bag permit securely pinning or corner desirable feature for use in boys or girls camps. Filled with soft, warm Kapoc or wool, lined with attractively colored plaid pattern of good quality flannel. Weight 6½ lbs. Size 35x82 inches.
28651. **$25.20**



FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from us which does not prove entirely satisfactory on receipt

BADGER LINE Railway Car Movers and Wrenches

New Badger No. 5 Car-Mover

For general use, the New Badger is light and well balanced, yet has the power to move any loaded car. Most widely used of all tools for moving railway freight cars by hand. Castings of certified malleable of high tensile and ultimate strength.

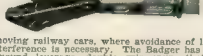
Weight 18 pounds. Length over all 70 inches.

Power-King Car Movers

Made for heavy duty, pushing more than one loaded car day in and day out. The compound leverage provides the powerful forward thrust, and double spurs grip the edges of the rail and prevent slipping. Made of certified malleable iron—special oversize handle.

Weight 18 pounds. Length 70 inches.

Badger Never-Slip Car-Mover No. 9



For moving railway cars, where avoidance of low brake beam interference is necessary. The Badger has a powerful compound leverage, double grip spurs that prevent slipping while the car is being moved.

Weight 18 pounds. Length over all 70 inches.

Advance Hopper-Bottom Car-Wrench

A Safety Wrench, fully and automatically adjustable to grip the square of any winding tap on hopper bottom cars.

Weight 16 pounds. Length 60 inches.

REPLACEMENT PARTS

No. 5 New Badger Car Mover Repairs

No. A—SHOE COMPLETE, with Spurs, Plate, Bolts and Rivets..$2.00
No. A—SHOE ONLY, with Toe Rivet and No. 23 Bolt 2.00
No. B—SOCKET COMPLETE, with No. C Toggle attached and No. 23 Bolt 3.00
No. B—SOCKET ONLY, with No. 23 Bolt and No. 24 Rivet 2.00
No. C—TOGGLE or CAM with No. 24 Rivet 1.00
No. D—SPUR PLATE or CLAMP with No. 21 Bolt..... $0.50
No. 20 — HANDLE — second growth Maple 2.00
No. 21—BOLT for attaching No. D plate ..... .10
No. 22—SPURS, Slip-Proof Double .. .50
No. 23—BOLT, for attaching A shoe .25
No. 24—RIVET, for Cam C..... .10
No. 25—TOE RIVET—hard steel.. .20

Power King Car Mover Repairs

No. 11—SHOE COMPLETE, with Spurs, Plate and Bolts..... $3.50
No. 11—SHOE ONLY, with No. 27 Bolt 2.50
No. 13—SOCKET COMPLETE, with Saddle 3.50
No. 13—SOCKET ONLY, with No. 27 Bolt 2.00
No. 10—SPUR PLATE, with No. 21 Bolt ..... .50
No. 13—SADDLE TOGGLE, with Rivet $1.00
No. 15—RIVET for roller..... .10
No. 21—BOLT for spur plate No. 10 .10
No. 22—SPURS, slip proof double.... .50
No. 26—ROLLER ..... .20
No. 27 BOLT for attaching No. 11 Shoe ..... .20
No. 20—HANDLE, second growth Rock Maple 2.00

Badger No. 9 Car Mover Repairs

No. 9—SHOE COMPLETE, with Spurs, Plate, Bolts and Rivets..$3.00
No. 9—SHOE ONLY, with Toe Rivet and No. 23 Bolt..... 2.00
No. 8—SOCKET COMPLETE, with No. 7 Toggle attached and No. 23 Bolt 3.00
No. 8—SOCKET ONLY, with No. 23 Bolt and No. 24 Rivet 2.00
No. 7—TOGGLE or CAM with No. 24 Rivet 1.00
No. 16—SPUR PLATE or CLAMP with No. 21 Bolt..... $0.50
No. 20—HANDLE — second growth Maple 2.00
No. 21—BOLT for attaching No. 16 Plate ..... .10
No. 22—SPURS, Slip-Proof Double.. .50
No. 23—BOLT for attaching No. 9 Shoe ..... .20
No. 24—RIVET for Cam No. 7..... .10
No. 25—TOE RIVET, hard steel.— .20

THE YALE & TOWNE MANUFACTURING CO.

Philadelphia Division — TRADE YALE MARK — Philadelphia, Pa.

HOISTING EQUIPMENT . . . Yale Hand Chain Hoists, Electric Hoists, Hand and Motor Driven Trolleys, Single I-Beam Cranes

Ball-Bearing Spur-Geared

This type of hoist, originated and developed by Yale, possesses the maximum mechanical efficiency obtainable in any chain hoist mechanism.

The Yale Ball-Bearing Spur-Geared Hoist is designed and built for years of trouble-free service. Its tremendous strength and durability are due to the quality of the materials, the workmanship and the engineering skill which is applied to every detail of construction.

SAFETY, as well as power, speed and efficiency, is provided to the highest degree by Yale Ball-Bearing Spur-Geared Chain Hoists in their wide range of capacities.

Chain Hoists

"From Hook to Hook a Line of Steel"

Heavy duty chrome vanadium steel ball bearings; steel load sheave; heavy one-piece heat-treated and ground driving pinion; planetary gear systems; die-formed, electrically welded load chain; heavy steel suspension plates; adjustable continuous hand chain guides; drop forged detachable steel shackles and special steel safety hooks.

300 Lbs. to 40 Tons

PRICES AND INFORMATION

Rated Capacity, Long Tons	Model	Price Complete, Standard Lift	Travel of Lower Hook or Standard Lift, in Feet	Extra Lift Price, Per Foot	Test Load in Long Tons	Minimum Distance Between Hooks in Inches	Weight in Pounds Net	Chain Pull to Lift Full Load in Pounds	Chain Overhauled to Lift Load One Foot in Feet
½	BB	70.00	8	1.80	¾	12	62	47	13½
⅝	BB	70.00	8	1.80	⅞	13	62	57	21
1	BB	90.00	8	1.80	1½	15½	94	76	21
1½	BS	120.00	8	2.00	2¼	18	136	102	35
2	BB	140.00	9	2.10	3	21	204	112	42
2S	BS	150.00	10	2.80	4½	23	269	102	77
3	BS	180.00	10	3.00	4½	32	312	107	70
5	BS	280.00	12	4.20	7½	45	413	103	126
5D	BS	280.00	12	4.20	7½	34	388	90	154
6	BS	330.00	12	4.20	9	46	413	123	126
6D	BS	330.00	12	4.20	9	34	388	108	154
8	BS	400.00	12	5.40	12	49	502	137	168
10	BS	480.00	12	6.50	15	52	612	132	210
12	BS	600.00	12	8.00	18	53	800	122*	126*
16	BS	720.00	12	10.80	24	66	1046	127*	168*
20	BS	820.00	12	12.00	30	62	1250	132*	210*
25	BS	950.00	12	12.00	37½	62	1250	165*	210*
30	BS	2700.00	12	18.00	45	64	2150	118*	385*
40	BS	2700.00	12	25.00	60	71	2200	120*	539*

S—Single Chain. D—Double Chain. *For each hand chain.

Yale Screw Geared Chain Hoists

½ to 5 Tons Capacity

Suitable for horizontal as well as upright service because they are light and portable, as well as strong and durable. Operate on worm wheel and screw principle and provide close headroom.

PRICES AND INFORMATION

Rated Capacity in Tons of 2,240 Lbs.	List Price, Complete	Regular Lift in Feet	Minimum Distance Between Hooks in Inches	Extra Lift, Price Per Ft. Incl. Hand and Load Chain	Chain Pull to Lift Full Load, Lbs.	Chain Overhauled to Lift Load One Foot, Ft.	Net Weight in Lbs.
½	50.00	8	13¾	2.50	62	40	46
1	60.00	8	16	2.80	87	53	60
1½	80.00	8	19¾	2.70	94	80	82
2	100.00	9	21	2.80	115	93	105
3	150.00	10	25½	3.00	132	126	188

Yale Differential Chain Hoists

½ to 2 Tons Capacity

Designed to meet ordinary hoisting needs where the speed and power of the spur geared and screw geared types are not required. Especially suitable for service where loads are comparatively light.

PRICES AND INFORMATION

Rated Capacity in Tons of 2,240 Lbs.	Total Lineal Feet of Endless Chain	List Price, Complete	Regular Lift in Feet	Minimum Distance Between Hooks in Inches	Extra Lift, Price Per Foot*	Net Weight in Lbs.
½	23	26.00	6	17	4.80	23
⅝	26	42.00	7	21	4.80	30
1	30	56.00	8	26	5.00	50
1½	33	72.00	8½	32	5.40	81

*Each foot of extra lift includes 4 feet of chain.

IMPORTANT—All Yale Hoists are tested to 50% overload—long ton rating 2,240 lbs.

508-1—*.

BAKER ROAD DISCS AND MAINTAINERS

Model 84A Baker Road Disc

Baker Road Discs and Attachments

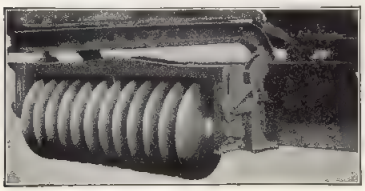
Baker Road Discs are built in two models, Nos. 84A and 112. Both have hand hydraulic control for lifting or lowering disc gangs and pulled by 20 H. P. tractors up. Model 84A is better adapted for cutting up black top and bituminous roads because of closer disc spacing. Model 112 is extensively used for cutting oiled-earth and sand-clay roads and for removing sod from road shoulders.

Model 84A has four gangs of thirteen 20-inch discs, each at 2-inch spacing, but spacing can be changed to 3, 4 or 6-inch. Total width of cut, 52 inches. Tires, 32x6 pneumatic. Approximate weight, 7,650 pounds.

Model 112, not shown, has four gangs. The two front gangs are permanently spaced at 5 inches, the rear at 6 inches. Total number of discs is 22 (20-inch). Width of cut, 62 inches. Approximate weight, about 3,640 pounds.

Disc Grader Attachments

Model 149A, front mounted, can be attached to the moldboard of any motor patrol. Model 249 (not shown) is attached to the rear of many but not all motor patrols. Both are used for cutting up and maintaining black-top and other type roads. They cut 46 inches wide at working angle. Discs can be spaced at 2, 3 or 4-inch centers. Weight, 1,100 to 1,400 pounds.



Model 149A Baker Disc Grader Attachment

Hydraulic Maintainers

Baker Road Maintainers are built in two models—Model 113A, hand hydraulic lift, and Model 213, power hydraulic lift.

At right, Baker Model 113A Hand Hydraulic Road Maintainer.

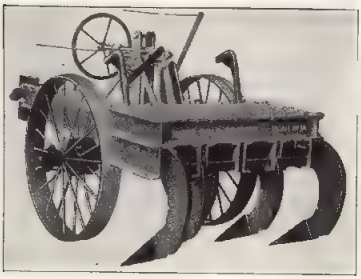
Both models have the same size and type of multiple blade sections with a reversible rear blade and provision for tilting the blade section to conform with the crown of the road or for cleaning ditches. Because of the unique design of the Maintainers, it is possible to carry the weight of the entire machine on the blades, making them more effective than Maintainers weighing several times as much.

Model 113A can be pulled by any 20 H. P. tractor or good truck. The latest type hand hydraulic pumps and jacks make operation easy. The cutting width is 9½ feet. Weight is about 3,010 pounds.

Model 213, shown below, operates by control valve at the tractor seat. A hydraulic pump directly connected to tractor transmission furnishes the power for accurate control of the blades to a fraction of an inch. It is handled by 20 H. P. tractors up. Cutting width is 9½ feet and weight about 3,025 pounds.

Model 213 Road Maintainer

BAKER ROAD ROOTERS AND SCRAPERS



Model 1A Road Rooter.

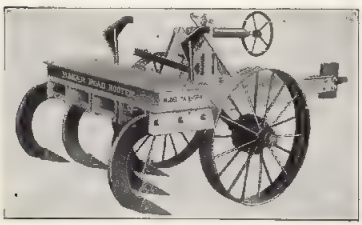
Baker Road Rooters

Baker Road Rooters are unexcelled for breaking and rooting tough soil on grading jobs or for breaking up old road surfaces. They are made in two sizes: Model 2A for 30 to 40 H. P. Tractors and Model 1A for 50 H. P. Tractors and over. Both have five teeth or points.

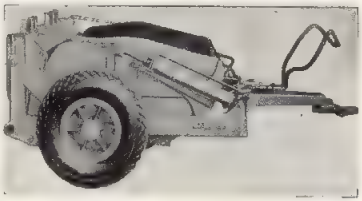
Both models are rope controlled from the tractor seat. Raising and lowering of points is quickly done through arms in engagement with the wheels. There is a hand-wheel adjustment for depth of cut to a maximum of 12 inches. The standards are removable and the high-grade teeth or points are readily replaceable. Sturdy steel wheels are used, each with Timken Roller Bearings.

The frames are of the necessary strength for such heavy-duty machines. They are of compact deck-plate construction throughout, all electrically welded. The drawbar is adjustable to conform to the drawbar of the tractor used and for decreasing or increasing the angle of penetration.

The width of cut on both models is 60". The weight of the Model 2A is 2,960 pounds, that of the Model 1A, 4,100 pounds.



Model 3A Road Rooter.



Model 300, 4-Yd. Hydraulic Scraper.

Baker Hydraulic Scrapers

Built in 3 sizes. Flat digging angle permits getting full loads with less power. Automatic clearance for carrying and dumping. Spread evenly—dump cleanly.

Hydraulic system can be provided for operating scraper with bulldozer or gradebuilder.

Brief Specifications

Model No.	Capacity Level	Capacity Heaped	Tractors	Weight
190-A	2.60 c. y.	3.00 c. y.	25-40 H. P.	4,500 lbs.
200	3.50 c. y.	4.00 c. y.	30-50 H. P.	5,950 lbs.
210	5.00 c. y.	5.50 c. y.	40-50 H. P.	6,975 lbs.

Baker Rotary Scrapers

Very economical earth movers for short hauls. They are built in 5, 6 and 7-foot sizes for various tractors.

An important feature of Baker Rotary Scrapers is the automatic draft control which, by adjustment, allows the scraper bowl to tilt slightly when fully loaded. This prevents stalling or over-loading.

The scrapers are full-revolving and it is not necessary to stop for loading or dumping. They can be kept in continuous operation throughout the round trip. The bowl makes a complete revolution each trip.

Brief Specifications

Model	Width	Capacity	Tractors	Weight
5A	5'	18 cu. ft.	15-20 H. P.	885 lbs.
6A	6'	32 cu. ft.	20-30 H. P.	1,220 lbs.
7A	7'	40 cu. ft.	30-50 H. P.	1,500 lbs.

Baker Rotary Scrapers in Loading Position.

BLAW-KNOX CONSTRUCTION EQUIPMENT

Clamshell Buckets

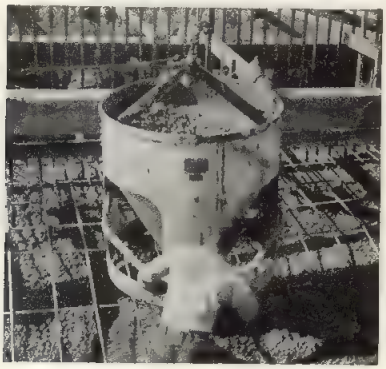
Blaw-Knox CLAMSHELL BUCKETS lead the field in design and performance for all kinds of digging and rehandling. A complete line of types and sizes for every conceivable bucket use is illustrated and described in Blaw-Knox Catalog No. 1757, a valuable reference work for the contractor interested in getting maximum performance from his crane equipment.

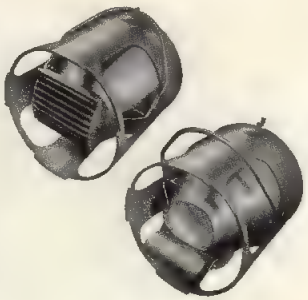
Blaw-Knox Buckets are noted for their efficiency and durability under hard service conditions, with minimum expenditure for repair and upkeep.

Type "R" Concrete Buckets

Blaw-Knox CONCRETE BUCKETS, with controllable discharge, are a popular concrete placing unit. They operate easily because the discharge gate is a thick rubber pad running on roller bearings. Leakproof—they are truly one-man operated.

Exclusive features of design put Blaw-Knox Concrete Buckets in a class of their own for easy and quick operation, complete controllable discharge. Made in all sizes from 1 to 8 cu. yd. capacity, for either normal or low slump concrete. Send for Catalog No. 1816.





BLAW-KNOX CONSTRUCTION EQUIPMENT

Type "C" Concrete Buckets

Blaw-Knox Type "C" Concrete Buckets are equipped with a double clamshell discharge gate of large size for rapid and clean discharge.

These are low cost buckets for normal slump concrete. They are made in ½, ¾ and 1 cu. yd. sizes.

Blaw-Knox Concrete Buckets are fully described in Bulletin No. 1870.

Truck Mixers and Agitators

Production of Blaw-Knox Trukmixers and Agitators has, except on special order, been interrupted for the duration. After the war, the Blaw-Knox Company will resume the manufacture and marketing of Truck Mixers and Agitators.

The newly designed Blaw-Knox Trukmixers will continue to maintain the enviable reputation which they have earned for themselves in the past through speed and thoroughness of mixing concrete; automatic and accurate water measurement; highest quality materials and workmanship, and trouble-free operation.

Tamping Rollers

Blaw-Knox TAMPING ROLLERS were pioneered by this company for the purpose of compacting earth fills, and this double drum roller with oscillating frame is the most popular of tamping rollers. Blaw-Knox Tamping Rollers are designed interchangeably so that they can be used singly, double, three abreast, double roller in front and single roller behind, etc. They are sturdily built for long life under hard service conditions. Send for Catalog No. 1736.

Truck Turntables

Blaw-Knox TRUCK TURNTABLES are used for turning loaded trucks in restricted spaces to avoid long distance backing, and the wear and tear of turning trucks. They are made in two styles—single end and double end and are extremely easy to operate.

Blaw-Knox Turntables are furnished in standard sizes and capacities; special turntables can be furnished to accommodate any size or capacity of truck. Send for Catalog 1822.

102-8-43

Old Gold Brand

$13.07 Doz
OVERALL

- Good sturdy quality meets your toughest competition at the low price field
- Quality 2.45 Wt. Blue Denim

Cut from 2.45 weight, mill finish blue denim. Seams sturdily stitched to withstand hard yanks and pulls in roomy pockets in the overalls and in the coat. Double bib pocket. Heavily barricked. Full cut, good fortable sizes. Wide, sun-cured suspenders. Sold in any quantity. Solid even sizes—state sizes.

27-5403—OVERALL. High back. Even waist sizes 28 to 46—no inseam sizes in size scale ..Doz 13.07

27-5405—COAT. Even sizes 36 to 50 . . . Doz 13.08

Size Scale for A.l Overalls—State Waist & Inseam

Waist	28	30	32	34	36	38	40	42	44	46	48	50
Inseam	28	30	32	34	36	38	40	42	44	46	48	50

Hardware Brand

$15.57 Doz
BLUE DENIM

- Sanforized so the fit stays in!
- Heavy 2.20 weight blue denim or blue and white liberty stripe.
- With all details shown above

Our best seller! Hardware Brand clothing gives the ability wearer. [illegible] Cut from heavy 2.20 weight blue denim. Seams sturdily stitched. Heavy bib pocket. Roomy pockets in coat and overalls. Wide suspenders. Full cut, comfortable sizes. Sold in any quantity.

Blue Denim Overalls—See Size Scale at Left

27-H110—Improved contianous full Vee back. Waist sizes 28 to 50—state waist and inseam sizes. **Doz 15.57**
27 H130—7 Oz Wt. Denim Coat—Sizes 36 to 50. **Doz 15.99**

7 Oz Wt Liberty stripe Overalls—Waist Sizes 28 to 46

27 H172 [illegible] Vee back. See size scale at left. **Not stocked St. Louis, New York, and Baltimore-Doz 13.63**

Boss Mechanic Brand

$18.28 Doz
OVERALL

- Sanforized shrunk 8 oz. Blue Denim.
- Graduated rise gives correct bib length for each inseam size.
- With all features shown on top of page.

Do [illegible] Cut from heavy 8 oz. [illegible] Sanforized shrunk blue denim. Seams sturdily stitched. Heavy bib pocket. Roomy pockets plus 3 ruler pockets. [illegible] pocketing in front pockets. [illegible] sturdy brass buttons. [illegible] Wide suspenders. Graduated rise gives correct bib length for each inseam size. Boss Mechanic Overalls are well [illegible] and [illegible] Sold in any quantity.

Blue Denim Overalls—See Size Scale at Left

27-5100—Improved contianous full Vee back. Waist sizes 28 to 50—state waist and inseam sizes . . . . . Doz 18.28

Blue Denim Coat to Match—State Sizes

27-5103—Sizes 36 to 50. **Not stocked in New York.** Doz 18.32

Denim Bandtops

$10.91
2.45 Weight

- 2.20 and 8 oz. weights Sanforized shrunk.
- All three weights are full copper riveted.

Match [illegible] Bandtops [illegible] comparable quality anywhere [illegible] Why we sell a less [illegible] of Heavy [illegible] Bandtops wear [illegible] Bandtops they're [illegible] pocket [illegible] sturdy [illegible] roomy pockets plus an extra [illegible] Orange stitching throughout. Metal fasteners won't break or crush. Waist sizes 28 to 42—state waist and inseam. Sold in any quantity

Extra side pocket for carrying pliers or rule.

Reinforced Metal Buttons.

Double sewn main seams—stitched metal reinforced.

Hardware Brand Blue Denim Bandtops

27-5424 2.45 wt mill finish **Doz 10.91**
27-5420—Sanforized 2.20 wt **Doz 12.16**

Boss Mechanic Brand Blue Denim Bandtops

27-5437 Sanforized 8 oz wt **Doz 13.17**

Waistband Overall Size Scale

Waist	28	29	30	31	32	33	34	36	38	40	42
Inseam	30	30	30	30	32	30	30	30	30	30	30
	32	32	32	32	32	32	32	32	32	32	32
			34	34	34	34	34	34	34	34	34
					36		36	36			

Bargains

Colored Glass Marbles

72¢ Doz Bags — *• 60 Marbles In Mesh Bag • Assorted Sizes and Colors*

Butlers Playdays marbles offer you regular chain store values. Beautiful glass marbles in striking color combinations . . . put up in a strong bag that measures 7¾x6 inches. Each bag contains an assortment of sizes including one No. 4 shooter (⅝ in.) and assd. Nos. 00 (⅜ in.), No. 0 (½ in.) and No. 1 (⅝ in.). Be ready for the first break in the weather with a big display of marbles . . . here's a line you won't have any trouble in getting . . . and with our special bargain price you'll be able to make extra profit on fast selling merchandise.

60-9325—2 doz bags in box — Doz bags 72c

Siren Whistles

$1.75 Doz — *Red, White & Blue Plastic!*

7¼ inches overall, made of plastic in patriotic red, white and blue colors, has wood plunger and felt stopper, each whistle comes with red carrying cord. Take advantage of this price!

60-9558—1 doz on display card ..... — Doz 1.75

Fresh Deodorant

75¢ Doz — *10c Size — a Grand Value!*

Fresh No. 2—checks perspiration and body odors. A dainty cream that's pleasant to use. Nationally advertised—it's a brand that's in big demand. Take advantage of this saving and fill your needs now!

95-2920—1 doz in carton — Doz 75c

Whistle & Badge

72¢ Doz Sets — *• Set on Card • 2 In. Whistle*

Plastic whistle, size 2 x ⅝ inch, fancy mottled colors, with alternating color cord. Cardboard badge with gilt finish.

62-8367—2 doz sets in box .. .... — Doz sets 72c

New Paint Books

75¢ Doz — *• 144 Pages • Fancy Cover*

"Mammouth," 8⅝x11⅛ inches, contains 144 pages, cover is printed in 4 flashy colors that will attract youngsters.

60-5936—1 doz in pkg — Doz 75c

BARGAINS FOR YOUR TOILET GOODS COUNTER!

3 Oz. Remover

80¢ Doz — *With Olive Oil Base*

Famous Gloriant nail polish remover in wide based, neck-up bottle. Olive oil content base.

95-9700—1 doz bottles in carton ... . — Doz 80c

Mar-O-Oil

72¢ Doz — *A Leading Shampoo!*

Marrow's Super-Foamy Shampoo that literally floats away hair grime. Soapless.

95-7422—1 doz bottles in carton . . . . — Doz 72c

Tooth Brushes

72¢ Doz — *DuPont Brand For Children*

Quality brushes with cleverly styled celluloid handles . . . evenly assorted Red Riding Hood and Little Boy Blue. 3x9 rows of patented fiber bristles.

95-6204—1 doz in box — Doz 72c

Futura Facial Tissues

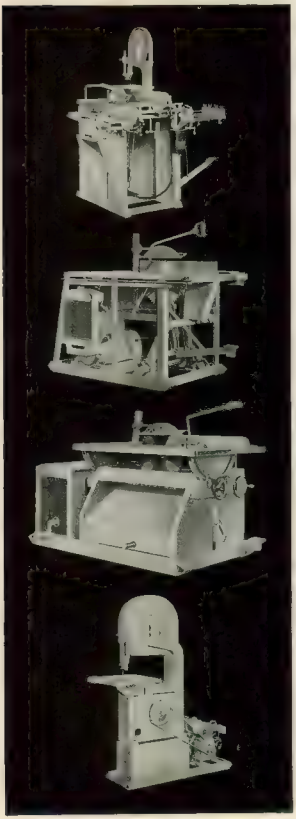
$2.10 Doz Boxes — *650 Full Size Sheets Extra Large Size Box*

A staple item that sells fast and steadily. All white tissues that are as strong and absorbent as more expensive brands. Packed in perforated box.

95-82094—2 doz boxes in crn., 26 lbs . . . . . — Doz boxes 2.10

Prices On This Page Good Until March 1st . . . Subject To Stock On Hand . . . No Back Orders

C. H. & E. PORTABLE SAW RIGS AND WOODWORKING MACHINERY



A complete line of Saw Rigs in four models. Can be furnished as rip and cross-cut tables only or with any or all of the available attachments. Gasoline or electric motor power.

Electric welded steel frames and steel plate tables. Endless V-belt drives standard. Saw guards on all models.

Homebuilder Jr. Woodworker

A lightweight, compact machine for ripping up to 3" lumber. Stationary table with tilting rip and cross-cut gauges for making all angular cuts. Stationary arbor running in ball bearings.

Powered by 3 h.p. single cylinder air-cooled engine. Maximum saw blade, 12". Weight, 275 to 325 lbs. Attachments—14" band saw, 6" jointer, borer and mortiser

No. 31 Saw Rig

A compact machine for production work up to 4" ripping. Table tilts to 45 degree angle and can be securely locked at any position. Swinging saw arbor with foot or hand control for rapid cross cutting can be clamped stationary for ripping. All shafts run on ball or roller bearings. V-belts easily removed without dismantling arbor or countershaft.

Choice of engines from 4 to 8 h.p.—maximum saw blade, 14". Weight approximately, 650 lbs. Attachments—14" band saw, 6" jointer and borer and mortiser.

No. 28 Saw Rig

A fast production machine for rapid cross cutting and heavy ripping up to 6" lumber. Stationary table securely fastened at four corners with tilting rip gauge and double bevel cross-cut gauge for making all angle cuts. Swinging arbor with foot or hand control—wick oiled bearings. Power units mounted inside frame and under table for compactness.

Four-cylinder air or radiator cooled engines, 12 to 15 horsepower. Maximum saw blade, 20". Weight, 900 to 1100 lbs. Attachments—20" band saw and 6" jointer.

No. 33 Saw Rig

The only portable saw rig with all the features of a precision shop tool. Tilting table with gear and handwheel control—straight line traveling arbor (no rails) with foot or hand control—vertical arbor adjustment—ball and roller bearings throughout—easy belt change—sawdust chute—sheet metal housing overall.

Four-cylinder engines, air or water cooled, 12 to 15 horsepower—maximum saw blade, 20", extends 7" above table—weights, 1100 to 1400 lbs. Attachments—20" band saw and 6" jointer.

Twenty-Inch Band Saw

A quality band saw designed for use as a stationary shop tool, portable construction saw or as an attachment for C. H. & E. Saw Rigs.

Rigid cast iron frame—aluminum wheels—ball bearings—spring tension device—ball bearing roller guides—tilting table—dust chute—complete metal guards overall—sheet steel base.

Furnished with ½ to 1 horsepower electric motors or 1½ horsepower gasoline engine. Weights, 375 to 600 lbs. Maximum saw blade, 1".

Send for Bulletin SR41.

153-1-43

C. H. & E. TWO AND THREE-TON TANDEM ROLLERS BAR CUTTERS AND BAR BENDERS

Two and Three-Ton Rollers

Small, compact, economical rollers for black top surfacing on driveways, playgrounds, tennis courts and parking lots, for compacting footpaths, highway shoulders and for general maintenance on estates, golf courses, municipal parks, athletic fields and airports.

Simple all-steel welded construction. Rear roll is fabricated from heavy steel plates and boiler heads—steel-tube axle with roller bearings. Front roll in two sections with steel axle revolving in bronze bushings. Scrapers on front and rear rolls.

The transmission consists of a primary and secondary gear reduction running in roller bearings and enclosed in an oil bath. Final drive is by means of bevel pinions to ring gear on the rear roll. Each pinion is equipped with an individual clutch. With a separate pinion and clutch for forward and reverse speeds, the wear is divided.

Steering mechanism is of the worm-gear automotive type. Brake is of the internal expanding automotive type.

Water tank with spray connections for front and rear rolls is offered as optional equipment.

C. H. & E. rollers are built with the greatest percentage of weight in the rear roll, thereby giving very heavy compression, greater than the compression of larger rollers of heavier total weight.

The Tuton machine has a variable weight from 3000 to 4000 lbs., giving a compression from 65 to 95 lbs. per lineal inch. Powered by four-cylinder 14 horsepower engine.

The Triton machine has a variable weight from 5000 to 6000 lbs., giving a compression from 115 to 140 lbs. per lineal inch. Powered by four-cylinder 16 horsepower engine.

Note—Two-ton Roller has been discontinued for duration of war.

Write for Bulletin RT-42.

Three-Ton Trailer

A general purpose trailer of three-ton maximum capacity for moving C. H. & E. rollers as well as other equipment from job to job.

Heavy welded steel frame with a durable wood platform. Drawbar is hinged to enable loading without detaching from the hauling vehicle. In loading, the trailer is tilted until the platform rests on the ground—rollers can be loaded under their own power.

Trailer is mounted on two heavy-duty, high-speed, truck-type pneumatic rubber-tired wheels. Weight, 1400 lbs.

Bar Cutters and Bar Benders

For cutting reinforcing rods on concrete work. Built entirely of steel to withstand severe shock and strain. Bar cutter knives are fabricated from high quality tool steel guaranteed against chipping.

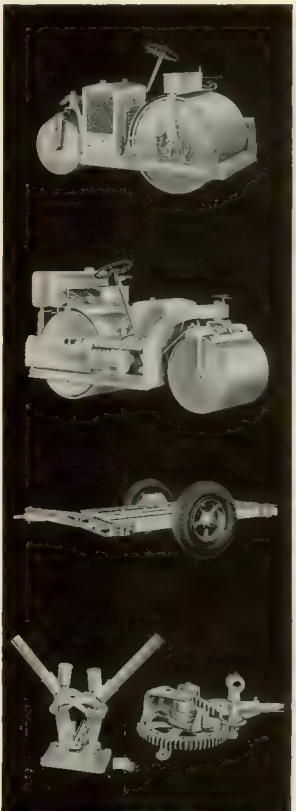
Built in two sizes each. No. 1 bar cutter will cut rods up to ⅝". Weight with handles, 135 lbs.

No. 2A bar cutter will cut rods up to 1¼". Weight, 155 lbs.

No. 5 bar bender will bend rods up to 1¼". Weight, 145 lbs.

No. 6A bar bender will bend rods up to 1½". This machine is capable of complete U bends. Weight, 250 lbs.

Write for Bulletin BB-39.



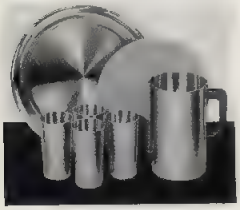
153-6-43

COCKTAIL SETS • BEVERAGE ACCESSORIES

Tantalus Set Ensemble. chrome holder with lock and key and 2 crystal bottles, etched Scotch and Rye and 8 whiskey crystal glasses height 11"
16410 **$18.00**

Chrome-plated cocktail set with 6 metal goblets embossed tray—13½" by 20" and 2 quart shaker
16411. **$15.75**

Two Bottle Tantalus Set , a chromium holder with lock and key and two clear crystal bottles. Height 11½ inches.
16412. **$15.00**



BEVERAGE SET

For sparkling beauty, this matched set has no equal Made of non-breakable easy-to-clean copper. Includes a gracefully designed 2 qt. pitcher, four tall 12 oz tumblers and a 12¾ inch serving tray with removable cork pad inset
16413. **$5.65**

Chrome-plated cocktail set with 6 crystal glasses with blue haze engraved center tray, and 2 quart shaker.
16414. **$13.50**

Silver Plated Vacuum Ice Cooler with insulated glass lining and self-opening swing handle cover Height including handle, 13½ inches; capacity 3 quarts.
16415. **$27.00**

Silver Plated Water Pitcher, capacity 2 qts.
16416. **$9.00**

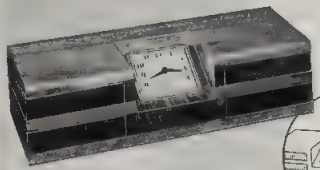
Antarctic Ice Bowl. Here is an excellent ice bowl and tongs. The bowl is a practical size and its shape is simple and attractive The handle is a practical shape, too, and a great convenience in passing the bowl around. The bow. can be used, too, for serving potato chips pretzels, or cocktail crackers Polished chromium finish with white plastic handle Size, diameter 7 inches.
16417. **$4.50**

Chromium Plated Extra Large Ice Cooler with crock liner and white celalin handles Capacity of cooler 2½ quarts height 11 inches
16418. **$10.00**

Chrome plated cocktail set with 5 hammered metal goblets two quart hammered shaker with metal handle etched tray—13½" by 20"
16419. **$19.50**

FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from us which does not prove entirely satisfactory on receipt

Cigomatic Gifts



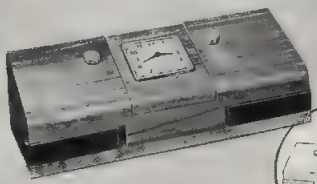
701—CLOCK AND CIGARETTE BOX COMBINATION

Guaranteed New Haven Clock. Finished in solid Walnut. Four draws hold 80 to 100 Cigarettes—Longs or shorts—or any other cherished possessions. Individually boxed.
Size—Length 11" Width 4½" Height 9"
LIST PRICE $11.40

703—CLOCK-LIGHTER AND CIGARETTE BOX COMBINATION

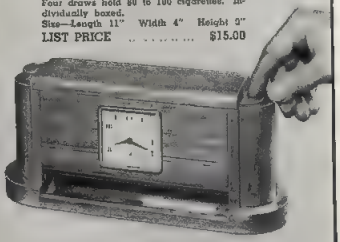
Guaranteed New Haven Clock – Dunhill Lighter—all enclosed in solid Walnut case. Four draws hold 80 to 100 cigarettes. Individually boxed.
Size—Length 11" Width 4" Height 9"
LIST PRICE $15.00

New and different smokers items. Beautifully finished and constructed in solid Walnut. Very handy for the average cigarette smoker. Useful at home and in the office. They hold Standard or King size cigarettes.



705—AUTOMATIC CIGARETTE BOX AND CLOCK

Guaranteed New Haven Clock. Solid Walnut case. Two draws for 50 cigarettes—Automatic release for each draw. Individually boxed.
Size—Length 11" Width 4" Height 3½"
LIST PRICE $13.20



707—AUTOMATIC CIGARETTE DISPENSER AND CLOCK

Guaranteed New Haven Clock. Solid Walnut case. Holds 20 cigarettes in each compartment—Automatic release for individual cigarettes. Individually boxed.
Size—Length 11½" Width 3½" Height 8"
LIST PRICE $13.20

10—CIGARETTE POPUP AND CLOCK

Guaranteed New Haven Clock—Case completely constructed of solid Walnut—Holds 20 Standard or King size cigarettes—Individually boxed.
Size—4½" by 4"
LIST PRICE $8.40

ALL PARTS AND MATERIALS MANUFACTURED IN THE U. S. A.

101—8 DAY CLOCK AND BAROMETER DESK SET

Guaranteed Plymouth Clock and Taylor Barometer enclosed in solid Walnut case. Brass perpetual calendar—brass swivels — Funnels and Desk Pens to match. Altitude adjustment of barometer to 3500 ft. Individually boxed.
Size—Length 12" Width 6" Height 5½"
LIST PRICE $33.00

PRICES NOT GUARANTEED

PLEASE NOTE! THE ABOVE ITEMS ARE OFFERED AS LONG AS OUR STOCK LASTS. CLOCKS CAN NO LONGER BE OBTAINED DUE TO GOVERNMENT REGULATIONS.

FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from us which does not prove entirely satisfactory on receipt

CRAM'S ILLUMINATED GLOBES

The latest thing in geographical globes are the illuminated models made by The George F. Cram Company, makers of globes, maps and atlases for 75 years. These beautiful models add distinction to any home. The illuminated models, besides being the most practical method of presenting geographical information, are very decorative. No matter where the globe may be placed in the room, a simple pull of the chain converts the conventional appearing globe into a glowing luminous ball that may be studied without eye strain. The decorative effect of the soft luminosity is very striking and marks a new note in room lighting.

Universal ILLUMINATED model. Map mounted on a 10½-inch antique Lumatex ball. Two-tone wheat and walnut finished wood table base. Complete with bulb, cord and plug. Height 14¼ inches. Shipping weight 4½ pounds. This model cannot be furnished except illuminated. Now supplied without semi-meridian as shown in illustration.

22620. ... **$12.00**

THEY ARE SELF-REVISING

Attached to each globe is a Guarantee Certificate. If sent to the publishers with ten cents for mailing they will send you, after Peace Treaties have been signed, revised map sections accurately die cut and so prepared that with the aid of very simple instructions you may bring your globe up to date.

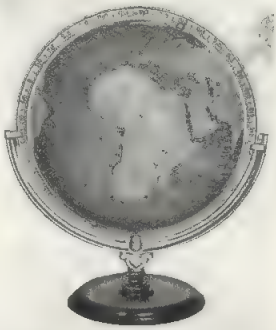
FREE With Each Globe
A Valuable Globe Handbook

DeLuxe. Hand-mounted map on a 10½-inch plaster ball. Brass-plated semi-meridian. Mahogany finished hardwood table base. Height 16 inches. Shipping weight 6 pounds.

22623. ... **$12.00**

ILLUMINATED model. Map is hand-mounted on a glass ball. Complete with bulb, cord and plug. Shipping weight 11 pounds.

22624. ... **$22.50**



Universal 12-inch globe ball. Solid walnut table base. Full movable meridian and half fork. Height 17¼ inches. Shipping weight 8¼ pounds. This model cannot be furnished illuminated.

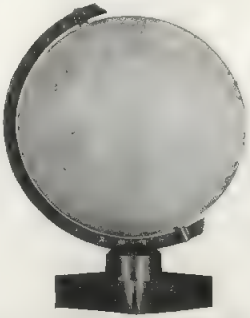
22627. ... **$12.75**

DeLuxe. Hand-mounted map on a 12-inch plaster ball. Solid walnut floor cradle. Full, movable meridian plated in brass. Height 33 inches. Shipping weight 22 pounds.

22621. **$40.50**

ILLUMINATED model of above. Map is hand-mounted on glass ball. Complete with bulb, cord and plug. Shipping weight 20 pounds.

22622. ... **$52.50**



DeLuxe. Hand-mounted map on a 12-inch plaster ball. Walnut finished modern wood table base. Brass plated streamlined semi-meridian. Height 18 inches. Shipping weight 10 pounds.

22625. **$15.75**

ILLUMINATED model. Map is hand-mounted on a glass ball. Complete with bulb, cord and plug. Shipping weight 15 pounds.

22626. ... **$27.75**

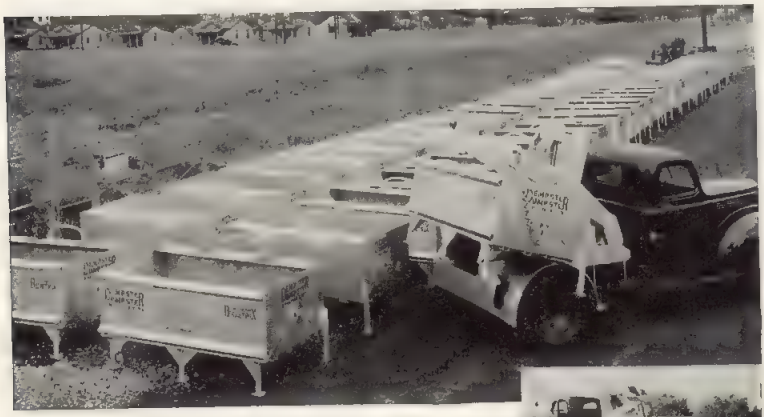
DeLuxe. Hand-mounted map on a 12-inch plaster ball. Solid walnut floor stand in Duncan Phyfe design. Full, movable meridian, fork and claw feet plated in brass. Height 26 inches. Shipping weight 15 pounds.

22628. **$30.00**

ILLUMINATED model. Map is hand-mounted on glass ball. Complete with bulb, cord and plug. Shipping weight 19 pounds.

22629. ... **$42.00**

FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from us which does not prove entirely satisfactory on receipt



DEMPSTER DUMPSTER

The greatest improvement ever developed for handling materials of all types in dozens of different fields of service.

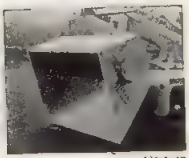
SAVES TRUCKS . . . SAVES TIRES
SAVES GAS . . . SAVES MAN HOURS

In many cases, one Dempster-Dumpster Truck Unit and a number of detachable bodies does the work of four or five regular conventional trucks. Dozens of War Production and other industrial plants are saving manpower . . . increasing production and saving time with this equipment.

Wherever loading is done by hand, trucks are constantly on the move hoisting, hauling and dumping loaded bodies while other bodies are being loaded. Adaptable to handling any type of material whether it be very heavy, light, dust or liquid. Used in some plants to transfer finished and unfinished parts or products.

Types of bodies limited only by your requirements and the ability of our engineers to develop containers to meet your needs.

"There's a DEMPSTER-DUMPSTER built to meet every material-handling requirement."

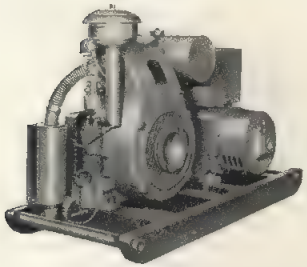


4M-1-43

FAIRBANKS-MORSE

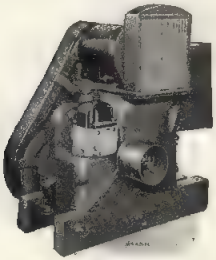
Electric Generating Sets

2500 Watts, 120 Volts



Fairbanks-Morse air-cooled light plants are real generating sets built for lighting and power service Model AC2500-H delivers 2500 watts at 120 volts, 60 cycles, single phase. Operates without field rheostat at all loads between no load and full load. Gasoline engine driven, contains filter unit to eliminate radio interference. Runs in any climate at temperatures from minus 30° F to 120° F.

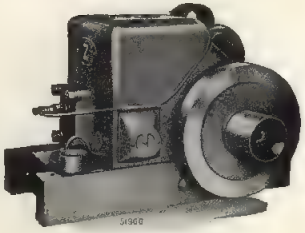
Model "A" Lighting Plants
750, 1500 and 2500 Watts



The Model "A" light plant above illustrated is V-belt driven from the famous F-M "Z" engine. Available in direct current only, 750, 1500, 3000 and 5000 watts capacity, 32 or 110 volts, for either direct lighting or storage battery service. The Model "A" is simple in design, dependable in operation, costs little to operate and little to own. Detailed information on request.

FAIRBANKS-MORSE

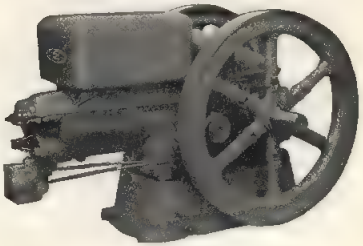
"Z" Engines
2 to 18 Horsepower



2 H.P. Standard Self-Oiling Engine

The "Z" engine has a world-wide reputation for dependability in service. Made in a variety of sizes from 2 to 18 horsepower to meet almost any power requirement. 2 and 3 horsepower sizes are of the self-oiling type, larger sizes have force-feed lubrication. All sizes except the 2 horsepower may be operated on either kerosene or gasoline.

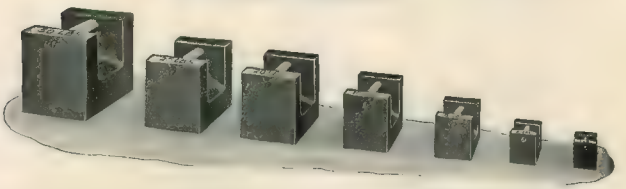
The "Z" line is equipped throughout with F-M high tension magneto, which is made exclusively by Fairbanks-Morse for service on engines of this type. Completely sealed—dust proof, oil proof, weather proof. The "Z" is the easiest starting internal combustion engine on the market. Detailed information furnished on request.



6-7 and 8-9 H.P. Size Fairbanks-Morse "Z" Engines

124-8-43

TEST WEIGHTS



The weights shown above are designed for the convenient use of sealers in testing all types of platform scales, wagon scales and track scales. They are of special construction to meet the many conditions required of a test weight, to make and maintain it absolutely correct, to plainly indicate any alterations that may be made in the weight, and to be easily handled.

The weights are made of very fine, smooth-grain cast iron with gable shape below the handle, all carefully finished so that there will be no possibility of foreign material adhering to the surface. The handle is formed of a piece of pipe cast integral with the weight. The weight is then drilled out on one end on the axis of the pipe and tapped. The screw plug is then inserted in this hole and is afterwards covered by a lead seal. When the lead seal is driven in place, the lead flows out into a counterbored section which fixes the seal securely in position. The face of the tool used to force the seal into position, also stamps the letter "P" on the end of the seal so that it cannot be altered without disturbing the seal. The weights are flat on top and bottom, thus allowing them to be easily stacked. All sizes are finished in durable aluminum paint. The method of sealing the test weight described above has been approved by the National Bureau of Standards.

Code No.	Code Word	Weight	List Price
3586	ZWEAC	50 lbs.	$8.00
3588	ZWEBD	25 lbs.	6.50
3590	ZWECE	20 lbs.	6.00
3592	ZWEDF	10 lbs.	5.00
3594	ZWEEG	5 lbs.	3.00
3596	ZWEFH	2 lbs.	2.50
3598	ZWEGJ	1 lb.	1.75

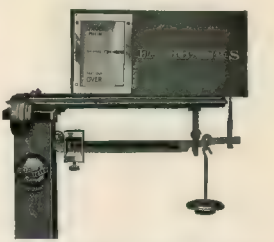
FAIRBANKS PRECISION INDICATOR

You can eliminate weight "guessing"—by equipping your scale with a Fairbanks Precision Indicator.

This indicator speeds up weighing and indicates correctly the weight of your merchandise. It prevents losses by actually increasing the accuracy of your scale.

The Fairbanks Precision Indicator is especially adapted for predetermined weighing, packaging, sacking, etc. The amount of weight over or under the required weight is instantly indicated on the large double-faced chart, which can be read either from the front or back of the scale. Pointer movement is 2¾" for 3½ pounds underweight and 2¾" for 3½ pounds overweight.

The construction of the indicator is simple and sturdy—no delicate parts to break or get out of order. The mercury tube principle—an exclusive Fairbanks feature—is used to control the oscillation of the indicator. It is the only device of its kind that works without oil or air dash pot. This precision indicator can be used, without impairing its efficiency, where the atmosphere is saturated



with dirt, or fine particles of matter, because the mercury is sealed in a circular tube.

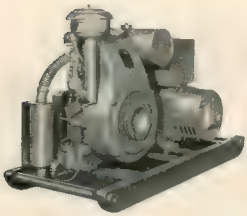
A Fairbanks Precision Indicator can be attached in ten minutes to any portable beam scale that has the beam supported under the cap. It does not require an expert—anyone can attach it.

124-7-41

FAIRBANKS-MORSE

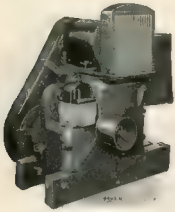
Electric Generating Sets

2500 Watts, 120 Volts



Fairbanks-Morse air-cooled light plants are **real** generating sets built for lighting and power service. Model AC2500-H delivers 2500 watts at 120 volts, 60 cycles, single phase. Operates without field rheostat at all loads between no load and full load. Gasoline engine driven, contains filter unit to eliminate radio interference. Runs in any climate at temperatures from minus 30° F to 120° F.

Model "A" Lighting Plants
750, 1500 and 2500 Watts

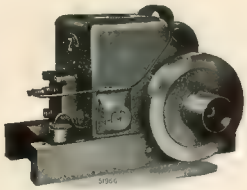


The Model "A" light plant above illustrated is V-belt driven from the famous F-M "Z" engine. Available in direct current only, 750, 1500, 3000 and 5000 watts capacity, 32 or 110 volts, for either direct lighting or storage battery service. The Model "A" is simple in design, dependable in operation, costs little to operate and little to own. Detailed information on request.

FAIRBANKS-MORSE

"Z" Engines

2 to 18 Horsepower



2 H.P. Standard Self-Oiling Engine

The "Z" engine has a world-wide reputation for dependability in service. Made in a variety of sizes from 2 to 18 horsepower to meet almost any power requirement. 2 and 3 horsepower sizes are of the self-oiling type, larger sizes have force-feed lubrication. All sizes except the 2 horsepower may be operated on either kerosene or gasoline.

The "Z" line is equipped throughout with F-M high tension magneto, which is made exclusively by Fairbanks-Morse for service on engines of this type. Completely sealed dust proof, oil proof, weather proof. The "Z" is the easiest starting internal combustion engine on the market. Detailed information furnished on request.

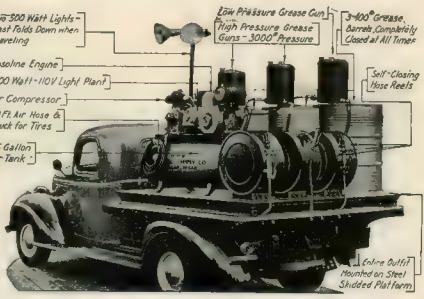
6-7 and 8-9 H.P. Size Fairbanks-Morse "Z" Engines

124-8-43

The *Ferguson* Portable Grease and Light Plant

Reduces Time-Out for Servicing Equipment to Absolute Minimum

1. Skidded removable steel platform with receptacles and holders for three 400-lb. barrels of grease and oil.
2. 8 cubic foot air compressor and tank with 6-8 H.P. gasoline engine.
3. 1000-watt, 110-volt lighting generator.
4. Folding light mast with two 500-watt reflectors.
5. 2 high pressure (4000 lb.) grease guns (for roller and bearing grease).
6. 1 low pressure grease gun for transmission grease or motor oil.
7. 3 self-reeling automatic hose reels.
8. 2 40-foot high pressure grease hose with control valves and fittings.
9. 1 30-foot low-pressure grease hose with self-registering meter and control valve.
10. 1 40-foot air hose with chuck and gauge for tires.


Two 500 Watt Lights - Mast Folds Down when Traveling
Gasoline Engine
1000 Watt - 110V Light Plant
Air Compressor
40 Ft. Air Hose & Chuck for Tires
75 Gallon Air Tank
Low Pressure Grease Gun
High Pressure Grease Guns - 3000# Pressure
3-400# Grease Barrels Completely Closed at All Times
Self-Closing Hose Reels
Entire Outfit Mounted on Steel Skidded Platform

Model No. 1

Complete on Skidded Removable Platform

(May Be Skidded Off When Truck Needed for Other Work)

Grease and Oil Is Pumped From Original Barrels Direct to Machinery

By simply moving into place and clamping down with hand-operated clamp, the original barrels are used—they are closed at all times—no dirt or dust—no transferring to open containers. NO TIME LOST.

Will Grease and Service Largest Tractor and Scraper Complete in 8 Minutes

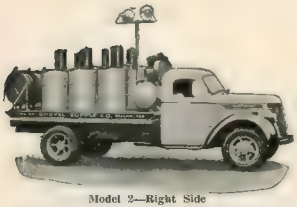
Any combination desired can be furnished on rubber-tired, spring-mounted trailer

Many contractors, whose equipment must work continuously, SAVE $100 PER DAY IN TIME SAVED ALONE!

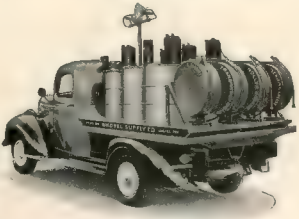
SELF-CLOSING HOSE REELS—Prevent broken or worn hose

643-1-41

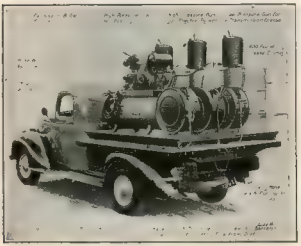
The *Ferguson* Portable Grease and Light Plant



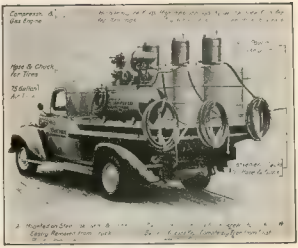
Model 2—Right Side



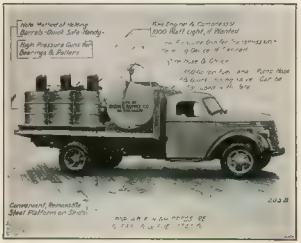
Model 2—Left Side



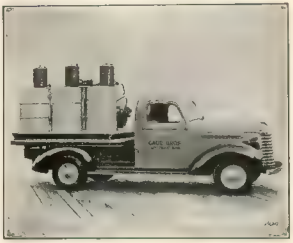
Model 3—With Self-Closing Reels



Model 3—With Hose Racks



Model 4—With 550-Gallon Fuel Tank



Model 4—Without Fuel Tank

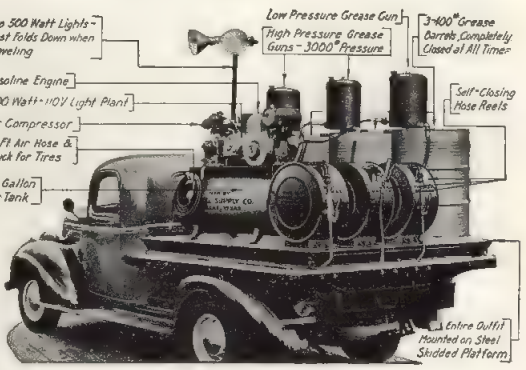
We also build many other styles and combinations of Grease Plants, Light Plants, Steam Cleaners, etc. If you do not see the exact combination you want, write us for further information. PLANTS ARE SHIPPED COMPLETE READY TO BE MOUNTED ON TRUCKS.

643-2-41

The *Ferguson* Portable Grease and Light Plant

Reduces Time-Out for Servicing Equipment to Absolute Minimum

1. Skidded removable steel platform with receptacles and holders for three 400-lb. barrels of grease and oil.
2. 8 cubic foot air compressor and tank with 6-8 H.P. gasoline engine.
3. 1000-watt, 110-volt lighting generator.
4. Folding light mast with two 500-watt reflectors.
5. 2 high pressure (4000 lb.) grease guns (for roller and bearing grease).
6. 1 low pressure grease gun for transmission grease or motor oil.
7. 3 self-reeling automatic hose reels.
8. 2 40-foot high pressure grease hose with control valves and fittings.
9. 1 30-foot low-pressure grease hose with self-registering meter and control valve.
10. 1 40-foot air hose with chuck and gauge for tires.


Two 500 Watt Lights - Mast Folds Down when Traveling
Low Pressure Grease Gun
High Pressure Grease Guns - 3000# Pressure
3-400# Grease Barrels Completely Closed at All Times
Gasoline Engine
1000 Watt-110V Light Plant
Air Compressor
40 Ft Air Hose & Chuck for Tires
75 Gallon Air Tank
Self-Closing Hose Reels
Entire Outfit Mounted on Steel Skidded Platform

Model No. 1

Complete on Skidded Removable Platform

(May Be Skidded Off When Truck Needed for Other Work)

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Any combination desired can be furnished on rubber-tired, spring-mounted trailer

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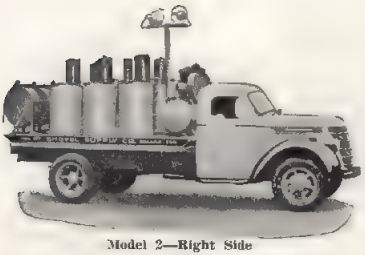
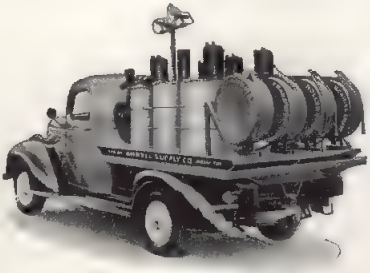
643-1-41

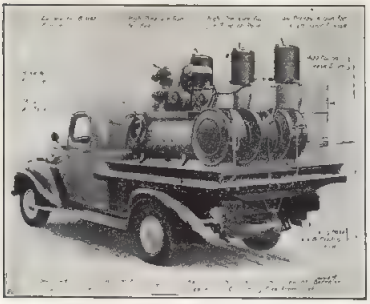
The *Ferguson* Portable Grease and Light Plant



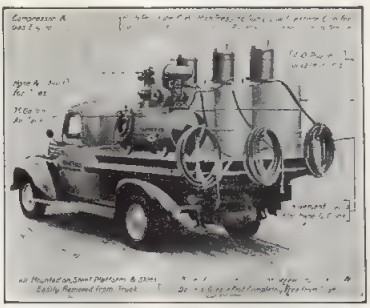
Model 2—Right Side



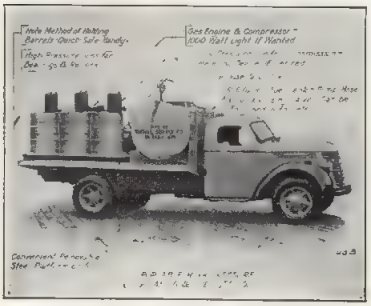
Model 2—Left Side



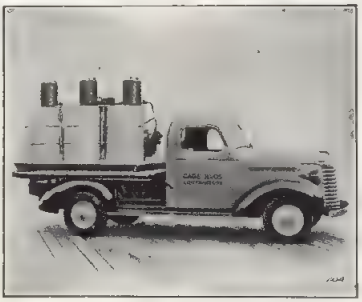
Model 3—With Self-Closing Reels



Model 3—With Hose Racks



Model 4—With 550-Gallon Fuel Tank



Model 4—Without Fuel Tank

We also build many other styles and combinations of Grease Plants, Light Plants, Steam Cleaners, etc. If you do not see the exact combination you want, write us for further information. PLANTS ARE SHIPPED COMPLETE READY TO BE MOUNTED ON TRUCKS.

648-2-41

"FLEX-PLANE" DUMMY JOINTS

Of all contraction joints, "ribbon" is by far the most popular. Roads built with ribbon joint have stood up well. It is furnished in 1/8" or 1/16" thickness and any depth. It should be placed just deep enough to control breaks one-fourth to one-third of slab thickness. It is watertight, dependable and no maintenance. Ribbon contraction joints are the vertebrae—without which the road will disintegrate.

Joint Installing Machine in Action

To eliminate all natural breaks, place ribbon contraction joints longitudinally and transversely where nature breaks are susceptible—thus eliminating maintenance and deterioration.

Other Notable "Flex-Plane" Products

Vibratory Finishing Machines
Finishing Machines
Black Top Finishing Machines
Concrete Spreaders
Traffic Line Marking Machines
Expansion Joint Installers
Dowel Bar Installers
Concrete Finishing Tools

BULLETINS ON REQUEST

342-2-41

Good Quality Mexican Palm Braid

Fedora shape. Natural color imitation leather sweat band. 3 inch brim with bound edge. Hydraulic blocked. Treated to resist moisture. Open weave around center of crown. State sizes asst. A, B, C, D —See guide.

21-H14—3 inch brim. 1 doz in box . . }
21-H15—3½ inch brim. 1 doz in box. . } Doz 7.50

Better Quality Mexican Palm Braid

Fedora shape. Natural color. Genuine leather sweat band with bound edge that won't unravel. Hydraulic blocked. Treated to resist moisture. Made with Mexican palm braid braid. State size assortment A, B, C, D—see scale on opposite page.

21-H16—1 dozen in box. . . . . Doz 8.00

Men's Cool, Comfortable Helmet Hats With Adjustable Head Bands For Accurate Fit

Enameled Top Palm Straw
Frank Buck Brand. Made of palm straw, enameled top. Bound edge prevents unraveling. Adjustable inside band fits any head size from 6⅝ to 7⅞. Assorted colors of white and 2 tan

23-J436—1 doz in box

Doz 2.20

Coco Colored Palm Straw
Frank Buck Brand. Made of fine coco straw. Cool-cooled Imitation leather bound edge. Has adjustable sweat band that may be adjusted to fit any head size from 6⅝ to 7⅞.

21-J464—1 doz in box.....Doz 4.50

Enamel Top and Bottom
Men's Frank Buck fine palm straw helmet shaped hat. Enameled top and bottom. Has bound edge with adjustable sweat. Adjustable sizes 6⅝ to 7⅞. Assd colors 2 white and 3 tan.

23-J439—1 doz in box

Doz 4.50

Fiber Covered Cloth Helmet
Frank Buck Brand. Fiber covered cloth helmet. Treated to resist moisture and hold shape. Adjustable to fit sizes. Bound edge. Adjustable sweat adjusts to fit headsizes from 6¾ to 7⅞

21-J492—1 doz in box . . Doz 8.50

Improved buckle makes adjustment easier. Simply put 1 end of band as illustrated

Our Good Quality Harvest and Sport Hats

Starting At $1.75 Doz

• All woven of durable straw—All with easily adjustable band for proper fit

Alpine Shape—No Sweat

Ⓐ Crease proves a new shape comfortable and cool. Has perforated crown for ventilation. Wide brim. Easily adjustable head band. Asstd. sizes 3 small (6⅝ to 7), 6 medium (7 to 7⅛) 3 large (7⅛ to 7⅜)

21-J422—1 doz in box.Doz 1.75

Fedora Shape—Patch Sweat

Ⓑ Light straw. Alpine shape with narrow crown and patch sweat band. Perforated crown. Treated to resist moisture. Peanut straw. Adjustable band. Asstd. sizes 3 small (6⅝ to 7), 6 medium (7 to 7⅛), 3 large (7⅛ to 7⅜)

21-J427—1 doz in box.Doz 2.00

Alpine Shape—Patch Sweat

Ⓒ Light straw. Alpine shape with narrow crown and patch sweat band. Perforated crown for cool ventilation. Adjustable band (see demonstration view above). Asstd. sizes 3 small (6⅝ to 7⅛), 6 medium (7 to 7⅛), 3 large (7⅛ to 7⅜).

21-J428—1 doz in box..Doz 2.00

Optimo Shape—No Sweat

Ⓓ Semi-dress optimo shaped hats in new cool weight. No real sweat with lock stitch impression. Perforated Perforated crown keeps head cool and comfortable. Adjustable band. See descriptive view above. Assd colors, small (6⅝ to 7), 6 medium (7 to 7⅛), 3 large (7⅛ to 7⅜).

21-J426—1 doz in box Doz 2.10

Carlsbad Patch Sweat

Ⓔ Perforated crown for cool comfort when Hand woven from fourth Mexican weave. Here's extra value customer cool service. Fine broad brim. Adjustable band. Asstd sizes 3 small (6⅝ to 7), 6 medium (7 to 7⅛), 3 large (7⅛ to 7⅜) **Not stocked New York & Minneapolis.**

21 J440—1 doz in box Doz 2.70

Fedora Shape—Patch Sweat

Ⓕ Fine palm straw. Has 3 air shafts on each side for cool comfort. Treated to resist moisture. Bound edge with sock stitch impression on sweat band. Perforations on each side. Adjustable head band. Asstd. sizes 3 small (6⅝ to 7), 6 medium (7 to 7⅛), 3 large (7⅛ to 7⅜)

21-J431—1 doz in box .Doz 2.20

Best Quality Sport and Harvest Hats

Starting At $3.00 Doz

• Finer woven, more carefully made—adjustable bands

Panama—Patch Sweat

Ⓖ Panama Treated to resist moisture. Bound edge. Adjustable sweat band. Asstd. sizes 3 small (6⅝ to 7), 6 medium (7 to 7⅛), 3 large (7⅛ to 7⅜).

21-J463—1 doz in box . . Doz 3.00

Kenaco—Patch Sweat

Ⓗ Jet Proofed Treated to resist moisture. Leatherette bound edge. Perforated crown & ventilators. Adjustable band. Asstd sizes 3 small (6⅝ to 7), 6 medium (7 to 7⅛), 3 large (7⅛ to 7⅜)

21-J477—1 doz in box . . Doz 4.25

Extra Visor Peak

Ⓙ Men's fiber woven hat. Extra visor. Optimo shape. Treated to resist moisture and sunlight. Bound edge. Leatherette sweat band with adjustable sizes. Has 3 air channels for cooling. Complete with patch sweat and offers unlimited variety in personal color effects on each side. A well made hat. Worn for other sport or work. Adjustable band. Asstd sizes 3 small (6⅝ to 7), 6 medium (7 to 7⅛), 3 large (7⅛ to 7⅜).

21-J488—1 doz in box.....Doz 4.10

Shellacked Pandan

Ⓚ Green, semi-ribbed on 3 sides. Leather bound. 3 air vents. Patch sweat. Adjustable band. Asstd sizes 3 small (6⅝ to 7), 6 medium (7 to 7⅛), 3 large (7⅛ to 7⅜)

21-J468—1 doz in box Doz 4.10

Coco Color Palm Straw

Ⓛ Optimo. Leather sweat band. Patch sweat. Perforations. Adjustable band. Asstd sizes 3 small (6⅝ to 7), 6 medium (7 to 7⅛), 3 large (7⅛ to 7⅜)

21-J462—1 doz in box Doz 4.50

GARDEN AND SPORT HATS

For Women, Girls and Misses

All made of durable straw, expertly blocked and carefully finished. Make your selections early and for faster service Order By Mail!

Our Best Quality Hats All Made Of Finely Woven Durable Palm Straw

Hand Woven-Swirl Pattern

$4.10 Dz.

Extremely flexible, Straw is dyed in several colors and hand woven in swirl pattern. Has 2½ in. underbrim and 4½ in. crown. Colored cloth band and fancy pinch bow trim. Tapered crown fits heads 21 to 23 inches. Assorted colors.

21-J691—1 doz in box..Doz 4.10

Coca Colored Fancy Straw

$4.25 Doz.

Dressy palm straw hat with bound edge crevenna narrowing Toledo shape. Is made with the popular coca colored straw. Tapered crown fits head sizes 21 to 23.

21-J682—1 doz in box..Doz 4.25

Natural-Colored Pattern

$5.25 Doz.

Treated to resist moisture and to hold natural shape. Natural colored straw in basket weave pattern in different colors. Variegated weave on brim edge of many different colors. Tapered crown fits heads 21 to 23.

21-J696—1 doz in box Doz 5.25

$1.75 to $2.25 Dz.

Good Quality Well Made Durable Palm Straw Hats

• Style and quality that will give you an edge on competition!

Natural Color-Stencil Full Brim

Ⓐ Low priced for quick sale! Made of good, quality palm straw. Comes in three styles. Printed bands. Assorted stenciled in bright colors. Tapered crown fits headsizes 21 to 23.

21-J652—1 doz in box. Doz 2.25

Asstd. Peak and Ridge Crowns

Ⓑ Women's palm straw hats in two flattering styles. Asstd. peak and ridge crowns with a mannish and tailored-type decorating. Bands, prints and printed bands. Asstd. sizes 6 small, 6 med.

21-J655—1 doz in box Doz 2.25

Cadie Shaped—Mottled Effect

Ⓒ Pretty two-tone cadet shape hats. Aged with a mottled effect. Asstd. colors. Has a wash proof band. Made of glossy split straw popular for summer and for beach wear.

21-J663—1 doz in box Doz 2.25

Diamond Shape Crown Sport

Ⓓ Three popular styles for you. Made of natural colored fine palm straw with a diamond shaped crown. Trimmed with a gayly printed band. Asstd. 6 small, 6 medium.

21-J657—1 doz in box..Doz 1.75

Assorted 2 Fancy Shapes

Ⓔ 2 fancy shaped palm straw hats. Enameled gay fire mixed top and assorted stenciled brims. Printed band. Tapered crown fits headsizes 21 to 23.

21-J657—1 doz in box.....

Doz 2.25

Telescope Crown—2 Styles

Ⓝ Can be worn with crown on both sides, the other in two tone mottled cocoa effect on both sides. Matching bound edge. Tapered crown fits headsizes 21 to 23.

21-J646—1 doz in box..Doz 2.25

Natural Color Tilt Edge Crown

Ⓒ Tilt edge crown. Hats woven of medium weight natural colored palm. Band and edge in 3-color braided straw. Tapered crown fits sizes 21 to 23

21-J675—1 dozen in box .....Doz 2.10

Peak Crown—Patriotic Colors

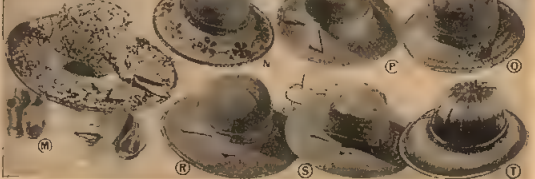
Ⓕ Patriotism is a desired necessity! Straw hats in the colors of red, white and blue. Asstd. red, blue crown. White cloth band. Tapered crown fits head sizes 21 to 23

21-J661—1 doz in box..Doz 2.25

Ridge Shape Crown—2 Styles

Ⓙ Customer Appealing Ridge shaped with fancy tilt crown in smoked mixed metallic gold and silver on both sides. Tapered crown fits headsizes 21 to 23.

21-J637—2 doz in box.....Doz 2.25



2 Styles Both Made Of Split Bamboo

Durab e Peanut Fiber

$2.10 Dz. Hand-woven

Ⓚ Handwoven from extra durable peanut fiber split bamboo. Has two bands. Use this hat for garden or sun. Many colors to choose from. Asstd. Has fancy printed bow and band. Tapered crown fits headsizes 21 to 23. Assorted colors

21-J658—1 doz in box ..... Doz 2.10

Fine Woven Pandan

$4.10 Doz. Hand-woven

Ⓛ Handwoven split bamboo from strong pandan fiber. Assorted in many colors. Style 658 Fine. Has fancy printed bow. Fine appetion in asstd. colors. Tapered crown fits headsizes 21 to 23. Assorted colors. Not in New York

21-J685—1 doz in box..... .Doz 4.10

Little Girls' Sun Hat Assortments—Made Of Quality Fine Durable Palm Straws

Tapered Shape Stetsys

$2.25 Doz. 3 Styles

Ⓜ Girls' two style assortment of Palm straw hats. Fancy bound edges, some in stetsy two tone effect. Bound edge prevents the raveling. Band and bow with matched ornaments. Tapered crown fits 6 to 8 yrs.

21-J736—1 doz in box.....Doz 2.25

Roh Roh Shape—Asstd. Colors

Ⓡ It's the hat choice of nearly every girl. Assorted ornamented colors and blankets. The edges are bound to prevent any unraveling. Fancy band of two tone bound edge. Has attractive ornament. Tapered crown fits headsizes 19 to 21½.

21-J738—1 doz in box Doz 1.73

Three Style Assortment

Ⓢ One plain straw straw, enameled top and button straw, and one banded straw with matched top. Printed bound edge with band to match. Asstd. sizes 1 small, approx. size 6½ to medium (approx. size 6¾) large (approx. size 6¾).

21-J738—1 doz in box Doz 2.25

Asstd. Three Crown Styles

Ⓣ Three popular shaped crowns, two-color shade, one more shape. One one color shape. Asstd. material and colors. Matching fancy band and bow. Asstd. sizes 1 small approx size 6½ to medium approx size 6¾, large approx size 6¾.

21-J768—1 doz in box.Doz 2.25

Asstd. Crown Styles

Ⓟ Catch the eye of the young Miss! Ample coolness with one perforation row band. Natural color Palm Straw Gay printed band. Assorted sizes: 5 small (approx. size 6½) 6 medium (approx. size 6¾) 3 large (approx. size 6¾).

21-J737—1 doz in box.Doz 1.73

Poke and Bonnet Shapes

Ⓤ Two styles, both of natural palm straw One poke shape and one bonnet shape. Both have bound edge with printed band to match. Stenciled brim. Asstd. sizes 3 small, approx. 6½ 6 medium (approx. size 6¾) 3 large (approx. size 6¾).

21-J766—1 doz in box Doz 2.25

Helmet Shaped Palm Straw

Ⓥ In three popular styles. 1 enameled red, white, and blue, 2 fancy mixed, and pat termed enameled top. Bound edge to prevent fraying. Adjustable band that is made to fit any headsize between 6 and 6½.

21-J790—1 doz in box.Doz 2.50

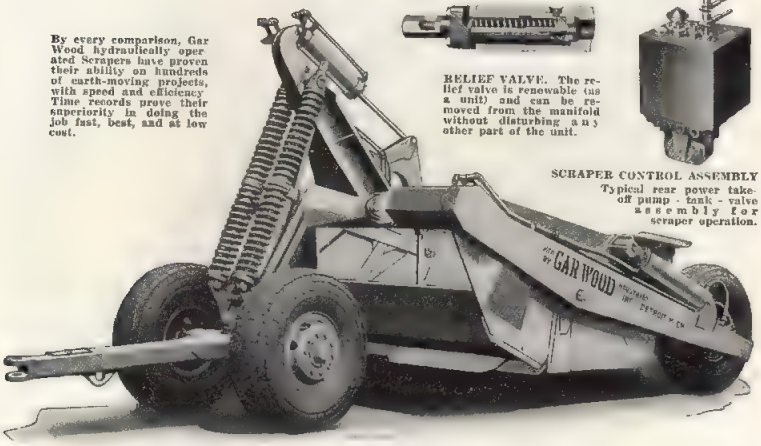
Buyers since last fan has been carefully developed to help you get a larger share of this profitable business. You will find all styles and types you need to do an outstanding selling job.

GAR WOOD HYDRAULIC 4-WHEEL SCRAPERS

By every comparison, Gar Wood hydraulically operated Scrapers have proven their ability on hundreds of earth-moving projects, with speed and efficiency. Time records prove their superiority in doing the job fast, best, and at low cost.

RELIEF VALVE. The relief valve is renewable (as a unit) and can be removed from the manifold without disturbing any other part of the unit.

SCRAPER CONTROL ASSEMBLY
Typical rear power take-off pump - tank - valve assembly for scraper operation.



Gar Wood hydraulic systems are designed and built specifically for heavy duty, continuous service with track-type tractors. No hydraulic system is better than its pump. That is why Gar Wood engineers undertook the development of a super pump that would more than handle the heavy duty work demanded in tractor operation. The control valve is in keeping with the advanced design of the pump. Movement of the control and distributing plungers provides the following actions: Power up — power down — hold.

The Scraper Control Assembly shown at top of page (left) is for use with units requiring independent control on three sets of jacks, such as the Gar Wood line of hydraulic scrapers.

The ruggedly constructed, hydraulically operated Gar Wood (4-wheel) Scrapers, with down-pressure for positive digging action, possess all essential features for fast loading, accurate spreading and smooth finishing in all classes of materials. The Gar Wood spring-lift mechanism prevents tractor stalling and loss of time, as follows: When in digging position, the springs are compressed. As load increases and tractor labors, the operator merely touches the blade control lever, causing the springs —without consuming any tractor power—to snap cutting edge upward, reducing cutting depth and relieving drag on tractor. Shortening of the wheelbase when hauling and dumping gives maneuverability and greater speed. For tough, abusive jobs, trouble-free service and more profits, it pays to use a Gar Wood. Capacities: 8, 10 and 15 yards.

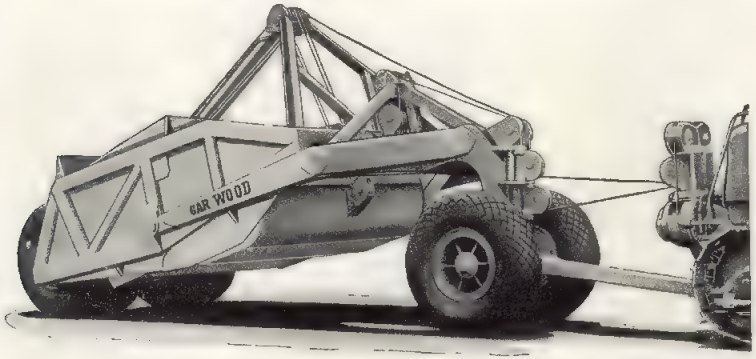
Specifications

SCRAPER MODEL	88	L10	400
Capacity — Heaped	8 cu. yds	10 cu. yds	15.0 cu. yds.
Capacity — Line of Plate Struck	6½ cu. yds.	8.5 cu. yds.	12.0 cu. yds.
Tractor Size Recommended	55 to 65 H. P.	80 H. P	80 to 105 H. P.
Wheelbase (Hauling)	14' 4"	16' 0"	15' 5"
Over-all Length Including Drawbar (Hauling)	22' 3"	26' 3"	26' 0"
Over-all Width	9' 0"	9' 11"	11' 0"
Bowl Width — Inside	7' 6"	8' 6"	9' 6"
Digging Depth Below Tires	1" to 6"	1" to 8"	1" to 9"
Depth of Spread Above Tires	0" to 12"	0" to 12"	0" to 12"
Bowl Clearance — Raised for Hauling	13"	13"	15"
Apron Opening (Digging)	32"	32"	31"
Apron Opening (Dumping)	44"	48"	44"
Size of Tires — Front	13.50x20 Single	13.50x20 Single	13.50x20 Single
Size of Tires — Rear — Standard	10.50x20 Dual	13.50x20 Dual	13.50x20 Dual
Size of Tires — Rear — Optional at Extra Cost		18.00x24 Single	
Weight Complete with Power Control Unit	14,700 lbs.	16,500 lbs.	18,700 lbs.
Drawn Weight — Scraper Only	13,750 lbs.	15,550 lbs.	17,650 lbs.

Weights and Specifications Subject to Change Without Notice.

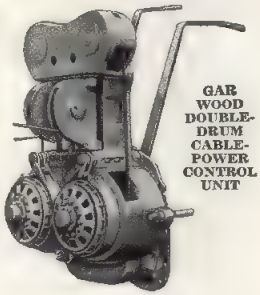
263-2-43

GAR WOOD 4-WHEEL CABLE SCRAPERS



By every comparison, Gar Wood cable-operated Scrapers, outstanding for fast operation, have proven their ability for all types of earth-moving projects. Time records prove their superiority in doing the job fast, best and at low cost. Made in three sizes. Capacities: 15, 20 and 25 cubic yards.

The Gar Wood cable-control system is designed and built specifically for heavy-duty, continuous service with track-type tractors. Gar Wood engineers developed the highly-efficient double-drum, cable-power Control Unit designed and tested for 30 cubic yard loads.



GAR WOOD DOUBLE-DRUM CABLE-POWER CONTROL UNIT

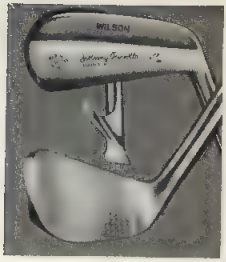
Specifications

SCRAPER MODEL	515	520	525
Capacity—Heaped	15 cu. yds.	20 cu. yds.	25 cu. yds.
Capacity—Line of Plate Struck	12 cu. yds.	15.8 cu. yds.	19.3 cu. yds.
Tractor Size Recommended	80 to 105 H.P	95 to 105 H.P. with Pusher	95 to 105 H.P. with Pusher
Wheelbase (Hauling)	19′ 0⅛″	19′ 4⅛″	20′ 4½″
Over-all Length including Drawbar (Hauling)	31′ 4⅜″	31′ 6⅜″	32′ 8½″
Over-all Width	11′ 5⅛″	11′ 5⅛″	11′ 5½″
Bowl Width—Inside	10′ 0″	10′ 0″	10′ 0″
Digging Depth below Tires	0″ to 12″	0″ to 12″	0″ to 12″
Depth of Spread above Tires	0″ to 24″	0″ to 24″	0″ to 26½″
Bowl Clearance—Raised for Hauling	24″	25″	26½″
Apron Opening	42″	54″	54″
Size of Tires—Front	13.50x20 Single	18.00x24 Single	18.00x24 Single
Size of Tires—Rear	13.50x20 Dual	18.00x24 Dual	18.00x24 Dual
Weight Complete with Cable Power Control Unit	22,300 Lbs.	26,190 Lbs.	31,900 Lbs.
Drawn Weight—Scraper only	20,400 Lbs.	24,390 Lbs.	30,000 Lbs.

Weights and Specifications subject to change without notice.

263-3-41

JOHNNY REVOLTA "CHAMPIONSHIP" WOODS AND IRONS



Woods—Light mahogany finish persimmon head with natural face and straight line face scoring. Special "X" type metal sole plate. True Temper chrome shaft with mahogany sleeve. Perforated black calfskin Sampson and Reminder grip.

DRIVER • BRASSIE • NO. 3 SPOON • NO. 4 SPOON
MEN'S RIGHT HAND ONLY

29110. ... Each **$13.00**
29111. Matched Set of 3 .. .. **39.00**
29112. Matched Set of 4.... .. .. **52.00**

Irons—Satin finish chromium plated double flange blade. Punch face scoring. True Temper chrome shaft with mahogany ferrule. Perforated black calfskin Sampson and Reminder grip. Numbers 2 to 9. Putter and Chip Iron. Men's Right Hand only.

716. ... Each **$10.80**
717. Matched Set of 8 (2, 3, 5, 7, 8 and Putter) ..... Set **84.90**

GENE SARAZEN "STROKEMASTER" WOODS AND IRONS

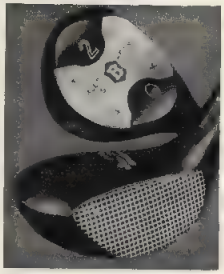
Woods—Dark mahogany finish persimmon head. "Butterfly" design metal sole plate. Mercury, chromium plated steel shaft by True Temper. Perforated black calfskin Reminder grip.

DRIVER • BRASSIE • SPOON
MEN'S RIGHT HAND ONLY

29113. ... Each **$10.80**
29114. Matched Pair ... **21.60**
29115. Matched Set of 3 .. ... **32.40**

Irons—Satin finish chromium plated head. Double flange blade. Mercury chromium plated steel shaft by True Temper. Perforated black calfskin Reminder grip. Numbers 2 to 8 and Putter. Men's Right Hand only.

29116. .. ... Each **$9.00**
29117. Matched Set of 5 (2, 5, 7, 8 and Putter) ..... Set **45.50**
29118. Matched Set of 8 (2 to 8 and Putter) ... Set **72.80**



"J. H. TAYLOR" WOODS AND IRONS

Triple Tapered Section Control Shafts—Unquestionably one of the most outstanding models ever built by Allied, J. H. Taylor clubs offer even greater value for 1942. The new model is now equipped with Triple Tapered Section Control Shafts, an improved type, constructed for greater accuracy and additional power. A new beveled groove type grip on both woods and irons assures positive traction and correct gripping with a minimum of attention to hands. The woods, have been further beautified with a rich dark walnut finish and a specially designed fiber face. Throughout each step in construction constant gauging and unusual precautions are taken to insure perfect balance, loft and lie. Choice materials carefully assembled give the 1942 J. H. Taylor's durability and performance that means unmatched golf club economy. Available in numbers one to four—Driver, Brassie, Spoon and Cleek.

29119. . . . Each **$10.00**

J. H. Taylor Irons—Chromium Plated Blades. Individuality is built into the outstanding 1942 J. H. Taylor irons. These distinctive clubs feature a new specially designed super flange satin finish Chromium Plated blade which has recently become popular with numerous professionals. A two tone face effect is gained by using dark burnished Jam. ine scoring. The special Triple Tapered Section Control shaft is of gun metal finish and is fitted to the head by patented Non-Shock Noiseless Hive. construction. A special rubber shock absorber eliminates any possible hand sting. Another outstanding improvement in the J. H. Taylor model is the new beveled edge groove type leather grip. Furnished in numbers two to Putter.

29120. . . . Each **$7.50**

"ROY HUNTER" FINE QUALITY CLUBS

Woods—Finest grade persimmon wood in new attractive pear shaped head model, medium walnut head finish with special burnished stripe across top of head. Special Allied design brass sole plate. Heddon special three ring action shaft chromium plated with 3-in. black collar lining partly over head, trimmed with green, black green and black rings. 14-inch oval full beveled edge leather grip with celluloid collar trim. Furnished in numbers one to four—Driver, Brassie, Spoon and Cleek. Right hand only.

29121. .. Each **$8.25**

Irons—Offset Super Flange Iron Heads—Suitable helpmates of the popular Roy Hunter woods are the equally famous irons. Sturdily yet gracefully constructed of choice materials these clubs are noted for the accuracy and power that means lower scores.
Offset super flange heads with built up type nose, and chromium two-tone satin finish with fan shaped straight line sweetspot face scoring, no rivet non-shock construction. Heddon special three-ring action shaft chromium plated with 2-inch black adapter trimmed with green, black, green and black rings. 14-inch full bevel edge leather grip with black celluloid collar trim. Furnished in numbers 2-3-7 and Putter.

29122. ..... Each **$6.40**

FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from us which does not prove entirely satisfactory on receipt.

HAMPDEN WATCHES

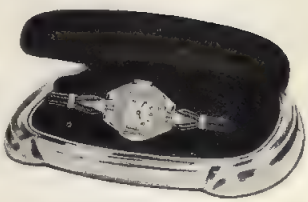
Triple leaf. a desirable style model. 14 Karat yellow solid gold lapped case. 17 Jewel Hampden movement with raised figure dial. Silk cord with ratchet safety clasp.
3101 **$63.00**

You can be sure of distinguished styling in HAMPDEN Watches. The cases represent the skill of America's Master Designers and case craftsmen. They are guaranteed to be of the quality represented, as defined by the United States Gold Stamping regulations.

You can be sure of mechanical excellence in HAMPDEN Watches. The movements embody the newest technical improvements in watchmaking: Glucydur-balance which is non-magnetic and non-tarnishable, metalinver hairspring, steel polished escapement with cap jewel and Rhodium non-tarnishable plates.

The parts used in HAMPDEN movements are standard and interchangeable. They are generally available at any reliable jewelry store or watch repair shop.

Compare HAMPDEN Watches only with other leading advertised quality watches in their retail price range.



Exquisite styling. 10 Karat natural Yellow rolled gold plate case. Choice of two Hampden movements with raised figure dials. Silk cord with ratchet safety clasp.
3102. 17 Jewel **$41.50**
3103. 7 Jewel 32.20

Gift Boxes. Every HAMPDEN Watch is delivered in the handsome presentation box pictured.

Popular round shape in Pink 10 Karat rolled gold plate case. Choice of two Hampden movements with Pink dial and black figures. Curb link bracelet with ratchet safety clasp.
3104. 17 Jewel **$44.50**
3105. 7 Jewel 35.20

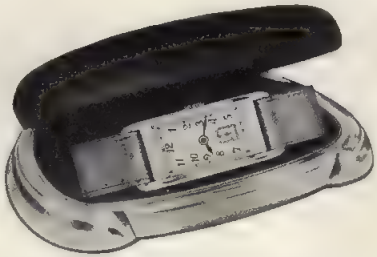
Presentation Pocket Watch. in keeping with Hampden's highest standards of quality and value. Extra thin model Hampden movement with raised figure dial. Can be had as follows:
3109. 7 Jewel 10 Karat natural yellow rolled gold plate **$33.00**
3110. Same as above in 17 Jewels . . . 42.50
3111. Same as above in 17 Jewels 10 Karat natural yellow gold filled . . 48.50
3112. Same as above in 17 Jewels 14 Karat solid yellow gold 100.00

Lovely long line modern tonneau design. 10 Karat Yellow gold filled case. 17 Jewel Hampden movement with raised figure dial. Silk cord with ratchet safety clasp.
3106. . . . . **$45.00**

Set with two diamonds. Choice of Yellow or Pink 10 Karat raised gold plate case. 17 Jewel Hampden movement with raised figure dial. Silk cord, safety clasp.
3107. Yellow **$59.00**
3108. Pink 58.00

Choice of Pink or Yellow 14 Karat solid gold case 17 Jewel Hampden movement with raised figure dial. Silk cord with ratchet safety clasp.
3113. Pink **$53.90**
3114. Yellow 53.90

10 Karat Yellow rolled gold plate case non-corrosive steel back. Choice of two Hampden movements. Pig-skin strap with Yellow buckle.
3115. 17 Jewel **$35.00**
3116. 7 Jewel



Streamlined for smartness, curved to fit the wrist. 10 Karat natural Yellow gold filled case. Dependable 17 Jewel Hampden movement with long raised figure dial. Pigskin strap with Yellow buckle.
3117. . . . . **$48.50**
Same as above in 14 Karat Yellow solid gold case.
3118. . . . . **$80.00**

A distinctive, thin, modern watch, curved to fit the wrist. 10 Karat Yellow rolled gold plate case. Raised figure dial. Pigskin strap with buckle. Choice of two Hampden movements.
3119. 17 Jewel **$42.50**
3120. 7 Jewel. 33.00

FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from us which does not prove entirely satisfactory on receipt.

Hand Wrought, Skilfully Made Emblem Rings

E700 — Masonic, Blue Lodge 10K Yellow Gold **33.00**

E701 — Masonic, Blue Lodge 10K Yellow Gold **31.50**

E702 — Masonic, Blue Lodge 10K Yellow Gold **24.00**

E703 — Masonic Blue Lodge 10K Yellow Gold **23.50**

E704 — Masonic, Blue Lodge, 10K Yellow Gold **24.00**

E705 — Masonic, Blue Lodge, 10K Yellow Gold **24.00**

E706 — Masonic, Blue Lodge, 10K Yellow Gold **31.50**

E707 — Masonic, Blue Lodge, 10K Yellow Gold **27.00**

E708 — Masonic, Blue Lodge, 10K Yellow Gold **25.50**

E709 — Masonic Blue Lodge 10K Yellow Gold **29.50**

E710 — Masonic, Blue Lodge, 10K Yellow Gold **24.00**

E711 — Knight Templar, 10K Yellow Gold **31.50**

E712—Consistory, 32nd Degree, 10K Yellow Gold **33.00**

E713—Consistory, 32nd Degree, 10K Yellow Gold **45.00**

E714 — Same with .25 Diamond **150.00**

E715 - Masonic, Blue Lodge, 10K Yellow Gold **31.50**

E716 — Same with .10 Diamond **69.00**

E717 — Consistory, 32nd Degree, 10K Yellow Gold **44.50**

E718 — Same with 10 Diamond **81.75**

E719—Consistory, 32nd Degree, 10K Yellow Gold **43.50**

E720—Consistory 32nd Degree, 10K Yellow Gold **37.50**

E721—Consistory, 32nd Degree, 10K Yellow Gold **31.50**

E722—Consistory, 32nd Degree, 14K Yellow Gold **43.50**

E723 — Same with .50 Diamond **280.00**

E724—Past Master, 10K Yellow Gold **37.50**

E725 — Same with .10 Diamond **75.00**

E726—Past Master, 10K Yellow Gold **31.50**

E727 — Shrine, 10K Yellow Gold **29.50**

E728—Moose, 10K Yellow Gold **26.50**

E729 — Elk, 10K Yellow Gold **33.00**

HAUCK FIRE-GUNS

Burn Kerosene or No. 1 Furnace Oil

For thawing out frozen valves, pipe lines, conveyors, pumps, etc., melting ice and snow on building materials, machinery, etc., drying for waterproofing, preheating concrete joints in pavements, preheating cuts in asphalt pavements prior to filling, breaking up rock and boulders, burning weeds and general heating and repair work these light duty torches are a big time and trouble saver.

3 POPULAR SIZES

No. 251 FIRE-GUN—With Giant Burner. Delivers large flame 4" x 36", 2000° F. Complete outfit consists of 5-gal. fuel tank, 6-ft. hose and burner. Fuel consumption—1½ gals. per hour. Shipping weight—30 lbs. Code Word: YIBJY.

No. 250 FIRE-GUN—Delivers a large flame 3" x 30", 2000° F. Complete outfit consists of a 4-gal. fuel tank, 6-ft. hose and burner. Fuel consumption—1½ gals. per hour. Shipping weight—21 lbs. Code Word: YEYAT.

No. 249 FIRE-GUN—Delivers a large flame 2" x 20", 2000° F. Complete outfit consists of a 2-gal. fuel tank, 6-ft. hose and burner. Fuel consumption—⅝ gals. per hour. Shipping weight—21 lbs. Code Word: YIBGO.

HAUCK TORCH FLAME BURNER EQUIPMENTS

For Heavy Duty

Burn Kerosene or Light Furnace Oil

No. 12 "One-Man" Equipment

Contractors use them for:

- Burning off paint.
- Burning off high spots in asphalt pavements.
- Drying out and heating concrete walls, floors, etc., for waterproofing
- Drying and heating sand, gravel, etc.
- Drying wet paving bricks before applying filler
- General heating and repair work.
- Heating tar and asphalt kettles.
- Heating pipes for bending.
- Melting babbitt, lead and bituminous compounds.
- Melting lead out of pipe joints.
- Melting ice and snow from roofs and drying up wet spots.
- Thawing out frozen material piles, concrete forms, air, water and steam pipes, hoppers and chutes.
- Thawing out "Frozen" tar and asphalt piping.

The intense powerful flame of 2000° F is not affected by wind or cold weather. To operate the outfit it is only necessary to pump up from 30 to 50 pounds pressure in the oil tank in order to force the oil to the burner where it is vaporized. As the burner does not consume any air from the tank, one pumping will operate it for several hours.

All tanks are made of steel with all seams and spuds electrically welded, tested at 200 lbs. pressure. Operating pressure is usually 30 to 50 lbs. The 12, 15 and 20-gal tanks are of heavy welded steel. Powerful quick-acting hand pump built inside of tank. 60 lb. pressure gauge; tank needle valve and hand-tite filler cap.

No. 215 Equipment

Single Burner Equipments

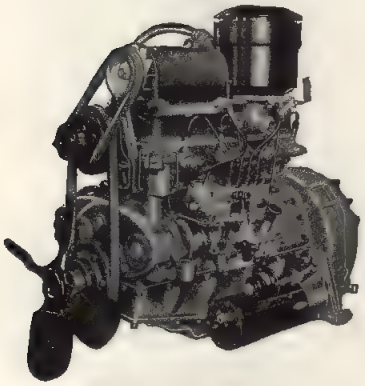
No.	Capacity Steel Tank Gallons	Length Hose Feet	Oil Consumption per Hour Gallons	Shipping Wt., Lbs., Complete Outfit	Burner Flame Inches	Code Word
211	2	6	1	32	3x24	Yemaj
211A	4	6	1½	45	3½x24	Yemka
212	5	6	2	50	3½x30	Yemek
213	12	12	2	110	3½x30	Yemja
214	15	12	3	115	4½x36	Yemke
215	20	12	3	125	4½x36	Yemmo
216	20	12	4	130	12x48	Yempy

Double Burner Equipments

213	15	2-12	2 each	125	3½x30	Yemyp
215	20	2-12	3 each	140	4½x36	Yenak
216	20	2-12	4 each	160	12x48	Yenel

48-1-43

Hercules Diesel Power Package Replacement Engines —For FORD and CHEVROLET 1½-Ton Trucks Revolutionary Economies in Haulage Costs!



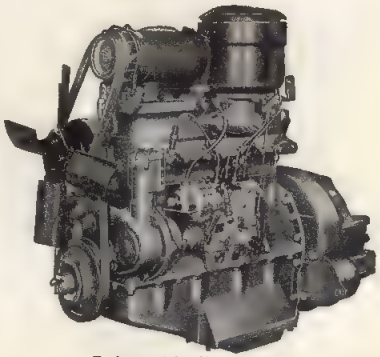
Replacement for Ford Truck

Fully engineered for Ford Trucks for the years 1935 to 1941, inclusive—and for 1940 and 1941 Chevrolet Trucks—Hercules Diesel Replacement Engines are available in complete Power Package units. Easily installed and easy to operate, these efficient engines bring you Diesel power at its best—clean, smooth operation, quickly responsive acceleration, and the lugging ability to hang on, with less gear shifting, when the going is tough.

These dependable Diesels are the same series engines used as original equipment by Ford Motor Company and General Motors Overseas Operations in Ford and Chevrolet Diesel-powered trucks for export shipment. Many hundreds are in successful operation today—more than 3,000 in Fords alone—doing a great job of hauling at fuel costs amazingly low!

When the Hercules Diesel Engine is installed in a Ford or Chevrolet Truck chassis according to the simple directions in each Power Package, the whole job is a complete, highly efficient, perfectly balanced unit. The Hercules Diesel Engine is started electrically, the same as a gasoline engine. Gear shifting is unchanged. The speed is controlled by a foot accelerator and a slight pull on a conveniently placed handle on the dash stops the engine when desired.

Full information on request. Please indicate whether you are interested in replacements for Ford or Chevrolet Trucks—and whether for Conventional or Cab-over-Engine models.



Replacement for Chevrolet Truck

138-8-41

BANJO-MANDOLINS

Extra Heavy Maple Rim: 11 inch diameter. Neck is also genuine Maple carefully shaped, accurately cut head. Substantial nickel plated top hoop, equipped with 12 flat top nickel plated brackets. Good selected white head finished calfskin heads, fine quality non-slip patent pegs. A real instrument at an extremely low price. Natural finish white maple.

Available in the Following Styles

27830.	(Illustrated.) 4-String **Tenor Banjo;** 23 inch scale	**$17.60**
27831.	8-String **Banjo Mandolin;** 14 inch scale	17.60
27832.	5-String **Banjo;** 27 inch scale	18.50
27833.	4-String **Plectrum Banjo;** 27 inch scale	17.60

Substantial laminated 11-inch maple shell, equipped with heavy aluminum alloy die cast 20 bracket flange. Choice maple neck, artistically shaped. Accurately treated celluloid bound fingerboard, 13½ inch resonator professional type laminated construction. Entire shell inside finished in a beautiful wo-tone brown rubbed and polished. Back of resonator and peg head are finely grained in a combination of satinwood and maple. All metal non breakable non-slip pegs. Nickel-plated extension brace and arm rest. Available in the following styles:

27834.	(Illustrated.) 4-String **Tenor Banjo;** 23 inch scale	**$36.60**
27835.	8-String **Banjo-Mandolin;** 14 inch scale	36.60
27836.	5-String **Banjo;** 27 inch scale	36.60
27837.	**Plectrum Banjo;** 27 inch scale	36.60

UKULELES

Genuine mahogany Ukulele in full TENOR size. One of the greatest values we have ever been able to offer. Built entirely of two seasoned genuine mahogany, and the fingerboard is solid wood covered. Sound hole is round. Entire instrument is finished in a rich two-tone, and highly polished. Genuine GROVER non-slip patent pegs. Fine set of strings. A truly remarkable value.

27838. **$10.70**

Standard size, low priced Ukulele for the amateur. Finished in rich black with stippled dot effect in white. The top edge is striped in white, and the top is decorated with a stenciled guard plate. Good non-slip friction pegs. Good quality strings.

27839. **$4.00**

"Blue Hawaii." Very attractive standard size Ukulele, finished in blue enamel. The top is decorated with a Hawaiian scene in contrasting colors. The top edge is striped in white. Substantial birch construction throughout. Non-slip friction pegs with white buttons.

27840. **$4.40**

Lowest priced genuine Mahogany Ukulele in standard size. Finished in a beautiful brown color, rubbed. Fine shaped neck with a genuine rosewood fingerboard, absolutely correct, fretted and equipped with pearl position dots. Good non-slip patent pegs. Fine set of strings.

27841. **$7.70**

FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from us which does not prove entirely satisfactory on receipt

THE BEST IN QUALITY • THE ULTIMATE IN BEAUTY

Betsy Wetsy. Ideal's famous all rubber nursing doll. She drinks wets and sleeps—and she's all tots understands. The head is made of Ideite, is practically unbreakable. Her arms, legs and body are made of Tru Flesh rubber. Comes complete with shirt, bottle and rubber nipple. Has sleeping eyes and lashes. Individually packed in attractive gift box.

26450.	16-inch size	$7.00
26451.	17-inch size	8.75
26452.	19-inch size	10.50

Layettes. Complete layettes on cellophane wrapped boards. Packed in individual boxes. Contain dress, hat, slip, booties, 2 diapers and 4 safety pins.

26453.	Fits 16-inch doll	$1.40
26454.	Fits 17 inch doll	1.56
26455.	Fits 19-inch doll	1.75

American Boy and Girl. Ideite to two gay native American dolls with lots of dash. Have jointed legs. Stand alone or sit. Dressed in colorful red white and blue costume. Soft construction.

26456.	24 inch size Boy	$8.40
26457.	24 inch size Girl	

America's Finest. Two smart-looking fellows garbed in uniform of soldier or sailor. These service men are uniquely constructed with sturdy, flexible metal cable arms and legs. Can be bent into almost any position. Fun for adults as well as children.

26458.	12 inch Soldier	$2.80
26459.	12 inch Sailor	

Clarabelle in Slacks. She's an easy-going big, beautiful soft doll measuring 40 inches from head to toe. Mask face and yarn wig very soft stuffed and beautifully dressed. A big suede doll for little girls. Right in style in popular slacks.

26460	40 inches	$11.20

Flexy Dolls. Constructed with sturdy flexible steel cable arms and legs. Funny, Sunny Sue and her boy-friend Sunny Sam. Can be bent into almost any of two hundred positions. 13-inch size. Lots of fun at parties.

26461.	Sunny Sam	$1.70
26462.	Sunny Sue	

SQUEEZE EITHER LEG AND SHE'LL CRY

•

LIMBS ARE SOFT AND WARM TO THE TOUCH

•

SHE CAN CLASP HER "MAGIC SKIN" HANDS

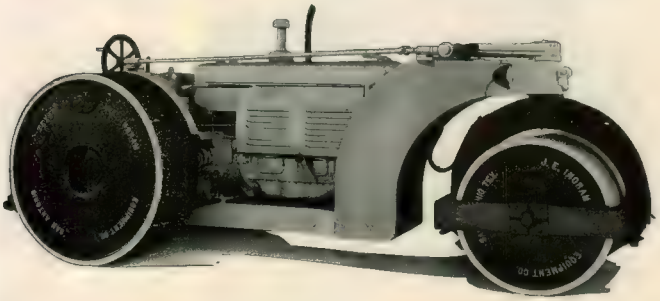
Magic Squeezee the sensational new doll with "Magic Skin" arms and legs. Just squeeze either leg—She cries, lay her down—She cries herself to sleep. This exciting new doll creation has a kapok stuffed body and composition head. Glass-like eyes and lashes. Comes dressed in beautiful organdy dress and bonnet, slip, rubber panties, shoes and socks. Limbs are—durable, light, soft, and warm to the touch. Lush like skin wrinkles are a real baby's can clasp her hands.

26483.	16-inch size	$5.25
26484.	19-inch size	7.00
26485.	22-inch size	8.75

Betty Jane. A little girl by heart and choice. Composition standing girl doll, with wig and glass sleeping eyes. Charmingly dressed in attractive print dress and straw hat.

26466.	15-inch size	$5.60
26467.	20-inch size	

INGRAM THREE-WHEEL Variable Weight ROLLERS



ROLLS: Cast—hollow—equipped with portholes for adding water or sand ballast to increase weight.

ENGINE and transmission built into one solid piece to maintain perfect alignment.

STEERING YOKE: Cast steel—provides greatest flexibility, larger working parts, and least possible wear, no side pitching.

KING PIN HEAD BLOCK: Cast steel—welded to frame—supported on large diameter **roller thrust bearing** for easier steering and longer life.

KING PIN: Encased in heavy bronze bushing.

MAIN FRAME: Steel—electrically welded—rugged.

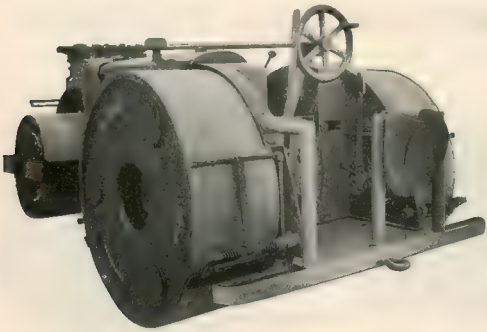
BEARINGS in wheels—TIMKEN—with steel grease seals—adjustable from outside.

SCRAPERS: On all wheels—front and rear—spring actuated.

SPRINKLING SYSTEM: Available for all sizes of rollers—with valve controls for water tanks located on rear panel within easy reach of operator.

Variable Weight: The wheels (rolls) are cast **hollow** and are fitted with portholes so they can be filled with water or sand—thus increasing the weight of the roller to produce more ground pressure when needed **—a very desirable feature.**

598-1-43

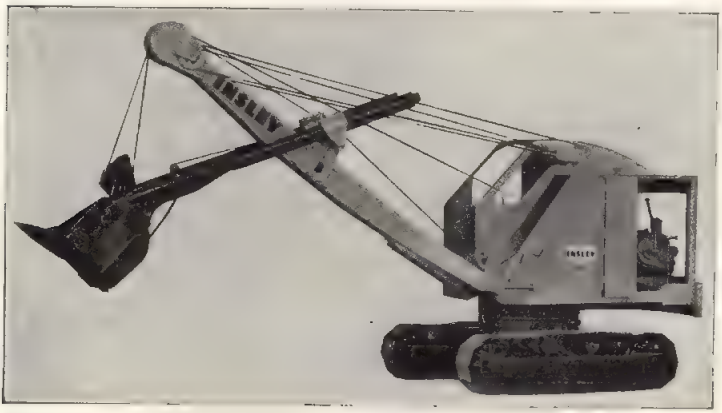


INGRAM ROLLERS

- Variable Weight
- Rugged
- Easy Steering
- Clear Vision
- Operator Comfort

	4-5 Ton	5-8 Ton	8-10 Ton	10-12 Ton
Engine: Case—gasoline—Model	SI	DI	LAI	LAI
Semi-Diesel—Model			LAIH	LAIH
Horsepower at governed speed	28	40	57	57
Bore and Stroke	3½"x4"	3 7/8"x5½"	4⅝"x6"	4⅝"x6"
Cylinder sleeves replaceable	Yes	Yes	Yes	Yes
Electric Starter	Included	Included	Included	Included
Rear Rolls—(Cast—Hollow) Diameter	42"	46"	60"	60"
Width	18"	18"	20"	20"
Front Rolls (Two) (Cast—Hollow) Diam.	30"	34"	42"	42"
Total face—Width	31"	38"	44"	44"
Rolling width total	62½"	70"	80"	80"
Wheel Base	96"	109"	132"	132"
Length—overall	141"	162"	194"	196"
Speeds—variable—Forward MPH	2½-3½-5	3-4-5½	2-3¾-5	2-3¾-5
Weight—without ballast ....pounds	8,440	11,500	16,700	20,600

"K-10" 3/8 Cu. Yd. and "K-12" 1/2 Cu. Yd. Insley Excavators



Type K-10 and K-12 Insley Excavators

The Type K-10, ⅜ cu. yd. excavator and the Type K-12, ½ cu. yd. excavator are identical in design, the only difference being in weight, size and capacity. The K-10 when equipped as a shovel weighs 22,820 lbs. The K-12 with the same equipment weighs 25,265 lbs. All of the usual attachments; shovel, hoe, crane and dragline are available for both machines. Also a skeleton type trailer for quick transportation.

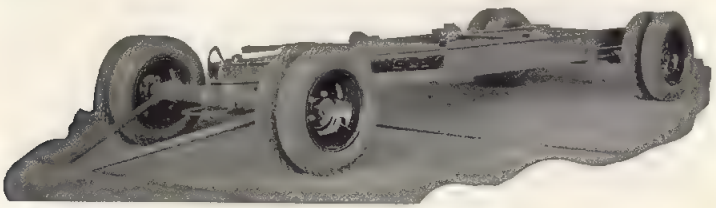
The design includes many desirable features which are not available in other machines of the kind. All high speed shafts are mounted on sealed ball bearings. This includes the main drum shaft and drum bearings. Since it is unnecessary to lubricate these bearings, all possibility of excess grease getting into the clutches is eliminated. Operators and owners alike appreciate this saving in time and labor which is usually required to wash the grease from clutches.

The crawlers are designed so as to be practically self-cleaning. The end sprockets have alternate sides of each driving pocket open so that material getting into the crawlers will easily be expelled. There is an adjustment at each end of the crawler and when enough wear has taken place that both adjustments are fully extended, they may be run in and a shoe taken out of the crawler tread.

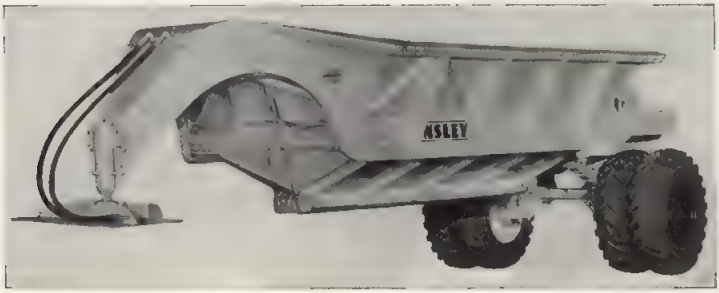
The steering of the crawlers is controlled by a lever for each crawler. Each lever actuates a jaw clutch and a friction brake on the opposite crawlers. In this way an operator has the same quick control in steering as is available in tractors.

Six-cylinder motors are used in both the K-10 and K-12. Electric starter and electric dipper trip are included as standard equipment.

Complete information and prices will be given upon application.



INSLEY MODEL "S" SEMI-TRAILER WAGON



The Model S Semi-trailer Wagon is built for use with trucks of not less than 2½-ton rated capacity. The body of the wagon has a capacity of 6.4 cu. yards struck level, the usual load of loose material being 8.5 cu. yards. Many owners have equipped their Model S Wagons with side boards and report hauling loads of 24,000 pounds.

The Model S Wagon is built for high speed, long haul work. It is usually furnished with 10.50x20 dual tires but large single wheels and tires are available if preferred. Since it is necessary to use vacuum brakes on all Model S Wagons the door mechanism is also tripped with a vacuum cylinder. The truck operator needs only to push a button on the steering column to dump the load and push a second button to wind the doors up into closed position. However, a hand wind-up is also available at a lower price if the long haul does not warrant the investment in an electric wind.

Complete information and prices upon application.

50-2-41

JAHN Heavy Duty TRAILERS

5 to 100 Tons Capacity – Any Axle or Wheel Arrangement

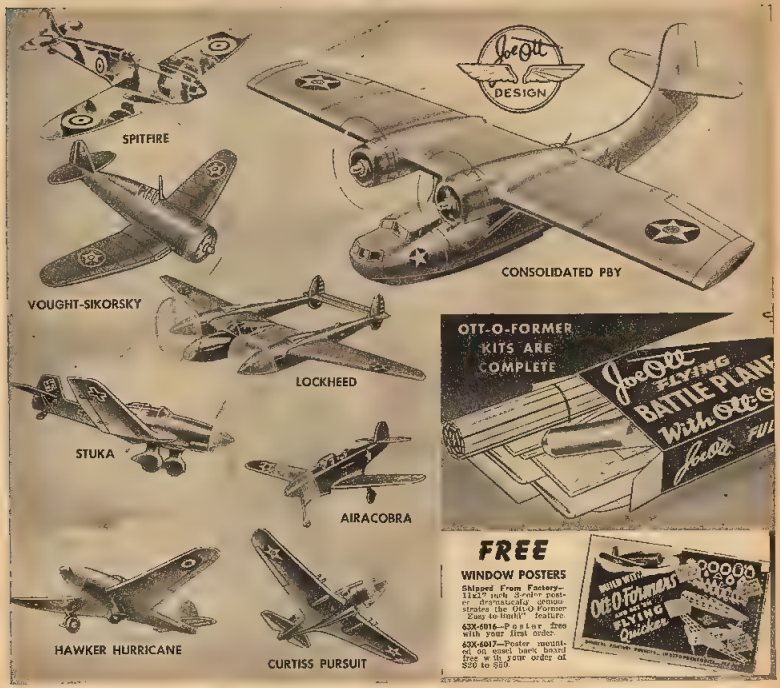
JAHN Heavy-Duty Trailers are engineered and built to give maximum service under the most severe operating conditions. There is a complete range of models built to meet all hauling requirements, from 5 to 100 tons capacity, available in any axle or wheel arrangement required. Illustrated here are five typical examples of Jahn Trailers "on the Job":

(TOP)—Model LKS, 4-wheel single axle trailer. Capacities 10 and 13 tons. (ABOVE)—Jahn 4-wheel "Single Purpose" trailer, used for transporting crawler equipment. (RIGHT, ABOVE)—Model DHM, multiple-axle trailer. Capacities, 32 and 38 tons. (RIGHT)—Model DHT, 6-wheel, tandem axle trailer. Capacities, 25 and 30 tons. (RIGHT, BELOW)—Model DHM, 12-wheel, multiple-axle trailer. All units shown, except "Single Purpose" models are easily convertible from full to semi-trailer

EXCLUSIVE JAHN FEATURES OF DESIGN AND CONSTRUCTION ASSURE REAL DEPENDABILITY

171-1-18

TEACH AVIATION DESIGN TO AMERICA'S YOUTH



IDENTIFIES PLANES WITH SILHOUETTES

IDENTOPLANES ARE BUILT TO SCALE—1 INCH EQUALS 72

Answers America's Appeal For Students To Study Plane Identification

Each kit contains 24 die cut models of the types of planes used by all nations in the war . . . Bombers . . . Fighters . . . Pursuits. Made of basswood. Complete with insignias, wheels, propellers, cement and bottle of black paint in large 12½x10½ inch colorful box. Wing spread from 6 to 14½ inches. Models may be used as gliders by cementing landing gear in place and adding putty or weight to nose. All models viewed from a distance of 35 feet will have the appearance of an actual plane as seen from a distance of 1 mile. Civilian Defense groups and students are urged to study plane identification . . . these kits have a tremendous amount of educational value as well as being fascinating fun

JOE OTT MODEL AIRPLANE DOPE AND CEMENT

SHIPPED FROM STOCK OR FACTORY

Factory Shipment information given on Ott-O-Former Kits on opposite page, applies to Dope and Cement, with the exception of the $10 minimum shipment. The minimum shipment for Dope and Cement is the packing shown.

Bottle Of Airplane Dope

About 2 oz., good quality.

SHIPPED FROM STOCK

80¢ Each

Stock	Color	Numbers
Clear	1	Black 4
Red	2	White 5
Blue	3	Green 6

SHIPPED FROM FACTORY

63X-7906—3 doz in ctn. 6 lbs Solid or mixed colors —make-up your own selection of colors

72¢ Doz

Stock	Color	Numbers
Clear	1	Black 4
Red	2	White 5
Blue	3	Green 6

Tube of Cement

Crystal clear, quick drying superior adhesive quality red, white and blue metal tube.

SHIPPED FROM STOCK

62-7909 .459 inch Tube. 3 doz in box. Doz 40c

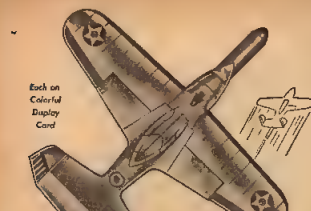
62-7917—.540 inch tube. 2 doz in box. Doz 80c

SHIPPED FROM FACTORY

63X-1008—.459 inch tube. 3 doz in ctn. 2 lbs Doz 36c

63X-1061—.540 inch tube. 1 doz in ctn. 2½ lbs Doz 72c

PUT SPECIAL EMPHASIS ON WAR TOYS . . .



New BLOW-A-PLANE . . . An Exclusive Butler Toy!

80c Doz

- Die cut cardboard bomber in brilliant red, white and blue
- 10 inch wing span, 8 inches long. 11 inch blowing tube
- Blow through the tube and the plane glides through the air

A novelty to be a sensation in the toy field. Boys love cardboard planes and here is a real plane that really flies. Boys will buy it on sight for real fun. Kids will be in the air with it. Plane is die cut cardboard in brilliant red, white and blue with authentic markings. Wings and tail are colorful and rugged. Just blow through the tube and the plane glides through the air. Instructions printed on the package show how to assemble plane. Tube is made of heavy paper. Easily assembled. Plane is packed in individual envelope. Tube is packed separately. Each plane comes complete with tube. Each assembled plane has a wing span of 10 inches, is 8 inches long and has a blowing tube 11 inches long. Boys will have fun flying these planes. Order yours today.

62-7916—2 doz in carton Doz 80c

"AMCO" Flying Model Kits . . . In 4 Best Price Ranges

Each kit contains Full size drawings, balsa wood, propeller and trucks. Models are replicas or copies of popular War planes as prominent in today's news.

16 to 20 Inch	25 Inch	32 To 37 Inch	32 To 54 Inch
78c Doz.	**$2.00** Doz.	**$5.12** Doz.	**$9.62** Doz.
12 styles, assid. Each kit contains full size drawings, balsa wood, propeller and trucks. Models are replicas or copies of popular War planes as prominent in today's news.	6 styles, assid. Each kit contains full size drawings, balsa wood, propeller and trucks. Models are replicas or copies of popular War planes as prominent in today's news.	6 styles, assid. Each kit contains full size drawings, balsa wood, propeller and trucks. Models are replicas or copies of popular War planes as prominent in today's news.	3 styles, assid. Each kit contains full size drawings, balsa wood, propeller and trucks. Models are replicas or copies of popular War planes as prominent in today's news.
62-7916—1 doz in pkg Doz 78c	62-7926—1 doz in pkg Doz 2.00	62-7945—½ doz in pkg Doz 3.12	62-7955—½ doz in pkg Doz 9.62

1 for battle, Kwik Dry for real fun, for all model making and hobby craft projects. Order yours today.

62-7973—3 doz in carton Doz 96c

Megow's World Famous Airplane Construction Kits . . . Choice of Several Models

75c Doz
Small Size

You will find Megow Kits easy to sell because they are nationally advertised from coast to coast. All kits are complete with plans and materials for making planes—1 kite selling for 5c and 10c stores and an attractive carton. Check over the various models to try

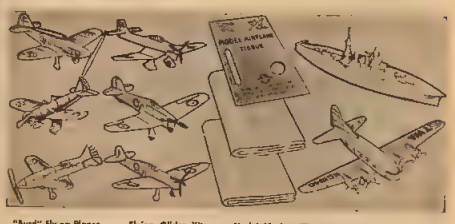
16 and 15 in. Wing Span—6 Models
Assortment includes British Spitfire Airscrubber, Curtiss 38 Pursuit, Lockheed Interceptor, Curtiss Pursuit, Mitsubishi Dive Bomber.
62-7931—1 doz in pkg Doz 78c

15, 16 and 20 in. Wing Span—4 Models
Fast selling stable assortment of 4 models 15 in. Rearwin Speedster 15 in. Taylor Craft Seaplane, 20 in. Primary Glider 16 in. Seaplane
62-7919—1 doz in pkg Doz 75c

24 Inch Wing Span—6 Models
Assorted No. 1 Faceless Curtiss Pursuit, Spitfire, Hurricane Monowing, Taylor Cub.
62-7938—1 doz in pkg Doz 2.04

30 Inch Wing Span—3 Models
Assid. Stinson Fairey Battle Royal Army Trainer
62-7943—⅓ doz in case Doz 6.42

Finer detail than 82-7942 above. Assid. Lockheed Interceptor Grumman Skyrocket
62-7956—⅓ doz in pkg Doz 6.72



"Burd" Flying Planes
Models include Bell Airacobra, Spitfire, Curtiss P40, Hurricane, Vultee Vanguard, Messerschmitt, Skoda and other popular types. Ready to fly. Each one has propeller. Cement wood cowl for easy painting. Lead wheels on box

18 Inch—12 Models
62-7918—1 doz in pkg Doz 78c

24 Inch—6 Models
62-7934—½ doz in pkg Doz 1.94

Flying Glider Kits
Made of balsa. Includes all cement and dope. Each kit has a propeller. Assortment of three kits to case of 12 or one each of Lockheed P38 Hurricane etc. Made of balsa wood with propeller. Includes cement and dope. Each kit has colored decorations

62-7943—Minimum shipping of 1 doz . . . Doz 2.08

Model Airplane Tissue
Each sheet is 22x24 inches and comes in an envelope ready covered colors. Model airplane tissue makes extra strong light weight model that will stand up under the strain of rough usage. Just the thing for the model airplane fan who is interested in the finer things. All important items to the profit of fanciers who are becoming more plane conscious

57 7902—3 doz envelopes in package Doz envs 39c

Shelf Model Kits
Strom Becker Boat Asst
Consists of a variety of boat models. Each one is a beautiful model that will sell at first sight. Each one is packed in a box with full instructions and a sheet that will sell at first
62-7936—½ doz in pkg Doz 2.35

Strom Becker Wood Planes
10 in. to 12 in. wingspan. Sturdy, well made ships. Will fly. Includes sandpaper, shaped parts
62-7957—½ doz in pkg Doz 2.35

Dive Bomber Planes
Wing span, wood body cardboard wings.
62-8411—1 doz in pkg Doz 76c

Patriotic Parashooter
12 in. tube in red, white and blue colors. Arrow shaped dart attached to red silk parachute
62-8095—2 doz in box . . . Doz 78c

Anti-Aircraft Cannon
Cloth work cannon mounted on base. Yellow fiber tube cardboard barrel. Will shoot small projectile
62-8409—2 doz in box. . . . . Doz 83c

Gun and Periscope Toy
Heavy cardboard, red and blue. It is long enough to sit in blow through and for mounting gun sight. Complete instructions
62-8444—1 doz in box . . Doz 2.00

Toy Periscopes
Slide in gun when fully extended. Heavy cardboard, red and blue and blue covers. Complete instructions
62-8456—1 doz in pkg . . . Doz 2.00

Toy Telescopes
14 in. long when fully extended. Heavy card board in two colors and one double glass draws give good sight
62-8457—1 doz in pkg . . . Doz 2.35

Air Line Raider Guns
Heavy cardboard red, blue and black. Fires by means of rubber band. Has 2 ft. rubber band and barrel
62-8458—Minimum shipping of 1 doz Doz 2.35

KOEHRING HEAVY DUTY CRANE

Adaptable to all kinds of material handling work the Koehring Crane is a time saving and profit earning machine in both industrial and construction fields. The contractor will find that the sensitive control and high speed of the Koehring Crane with the ability to peak the boom, hoist the load and swing all at the same time make it the most economical crane to use for setting steel or blocks or stone in building construction, and water and sewer pipe; or with any make of two line clamshell bucket for rapid handling of sand and gravel or other aggregates. The industrial plant manager will find the Koehring Crane a time and money saver with a clamshell bucket in handling coal, ashes and other material, with a magnet for handling plates, billets and scrap iron and with block and hook or slings for handling heavy and bulky materials.

63-3-41

KOEHRING HAULING EQUIPMENT

Koehring Hauling Equipment is available in three types, to suit a great variety of hauling jobs. Long or short hauls, high speed hauls, high speed loading, dumping and spreading, short turning on narrow fills are a few of the features of this money-saving equipment. The Koehring Dumptor has a wide body for easy loading instantaneous gravity dump without mechanical complications. Three speeds, forward or reverse, with constant mesh transmission permit time-saving shuttle operation. The Dumptor is easily spotted at the loading unit. Turning or backing at the fill is not necessary.

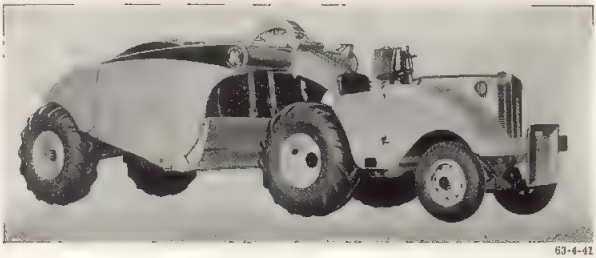
Koehring W60 Dumptor

High speed travel, when loaded, and instantaneous dumping on the fill are time-saving features of the Koehring Trail-Dump. "Non-raring" hitch holds traction effort to the ground. Hitch is ahead and below the drive axle. Rubber tired tractor has maximum flotation and ample horsepower for hauling capacity pay loads at high speed. "Automatic hand" door wind closes door in short travel space. Free swinging doors with high arched rear axle allow quick "getaway" from the dumped load.

Fast loading and high speed travel with the load save seconds every trip with the Koehring Wheeler. Load is easily and quickly dumped. Rear apron tilts forward at cutting blade hinge for complete ejection of dirt. High ground clearance of raised body when traveling provides clearance when Wheeler is in deep ruts. Digging power is applied both behind and ahead of the cutting blade. Pusher tractor provides power for digging and Koehring pull tractor provides power for high speed travel.

Koehring T120 Trail-Dump with Diesel or gasoline power, instantaneous dump, "non-raring" hitch, "automatic hand" door wind, wide body, high arched rear axle.

Koehring Wheeler, Diesel or gasoline, hinged rear apron to eject load, front apron movable to control spreading, high speed travel, high travel clearance of body, rubber tired high speed Koehring tractor.



63-4-42

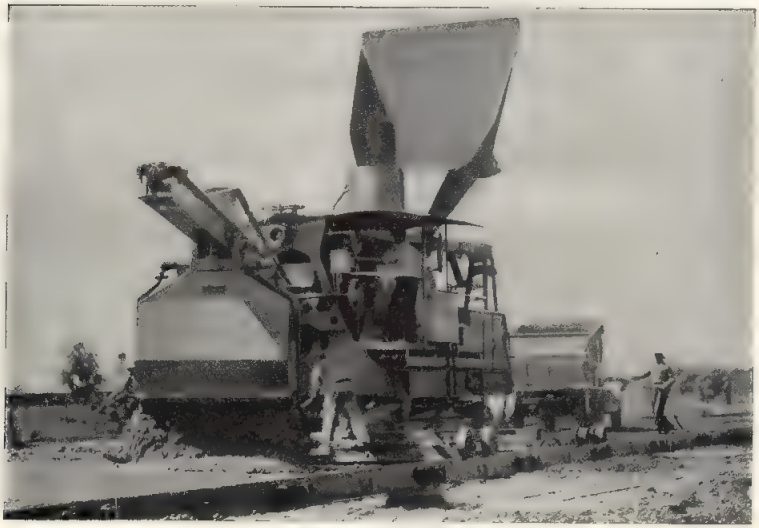
KOEHRING PAVERS

Koehring Pavers are built in two types, the 34E single batch drum paver with a capacity of 34 cubic feet mixed concrete plus 10% and the 34E Twinbatch, a two batch drum paver with a capacity of 34 cubic feet mixed concrete plus 10%.

The exceptionally rigid frame is built as one integral unit with a low center of gravity point. The machine has maximum stability when traveling or operating on shoulders with the boom extended to the side.

The wide, streamlined, all-welded skip is built without sharp corners or angles. An unobstructed, wide skip throat permits almost complete discharge of materials before the skip is in the elevated position. The skip is constructed of heavy plate and equipped with replaceable liners forming a single rigid unit.

Four steel trolley wheels mounted on large anti-friction bearings provide smooth and fast bucket travel. The oscillating boom distributes the bucket load equally to each trolley wheel. A vertical boom bucket position is always maintained. There is no twisting of the boom channels or frame regardless of the paver position on the grade. Bucket can travel when boom is swinging. The Koehring self-spreading boom bucket opens automatically when stopped at any point on the boom.



Koehring 34E Twinbatch Paver 63-5-41

KOEHRING LONGITUDINAL FINISHER

The Koehring Longitudinal Finisher is a new machine which mechanically assures a perfect finish for concrete highways. It is the new mechanical method giving untiring service, permitting exact adherence to the most rigid specifications of highway surface concrete.

The longitudinal finishing screed has a back and forth stroke of six inches while being moved across and forward on the slab. The surface is lapped at least twice in the progressive movement of the finisher. The carriage suspending this screed travels on a pair of template rails, by means of rollers. The templates can be adjusted to conform accurately with the crown specifications. The screed carriage travel is automatically reversed at the forms. The screed is raised just before reaching the forms and lowered at the beginning of reverse travel. Any excess concrete is carried back across the slab, and used to fill low spots that might occur.

KOEHRING MUD-JACK

The No. 50 Mud-Jack is a special combination mixer and pump for correcting settlements in rigid types of pavements. It mixes earth and water with sufficient cement to take up the shrinkage, and then forces the mixture through holes drilled in the slab. The pressure, which is built up by the pump, forces the mud under the slab causing it to rise.

Model No. 10 Mud-Jack is used for curb, gutter, walks and streets, thereby preventing pedestrian accidents and traffic hazards. Voids under the slab can be filled to stop future depression. All of this without reconstruction the saving accomplished pays for the machine in less than one season's operation—in addition to the protection of the original investment.

Model Fifty Mud-Jack for Highways and Large Area Concrete Slab

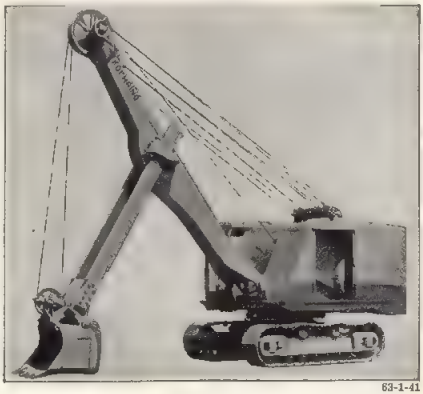
Model Ten for Curb, Gutter, Streets, Walks and Small Area Concrete Slab

63-6-41

KOEHRING HEAVY DUTY POWER SHOVEL

Koehring Heavy Duty Power Shovels are available in sizes from ¾ to 2 cubic yards. Fast operating speeds and quickly responsive clutches for easy operation are important factors for high production. Heavy-duty construction assures an exceptionally low maintenance cost. The high strength box type boom is welded throughout. The crowding action is entirely independent of the hoisting action and is absolutely positive. The shovel dipper can be crowded far out and above the boom. A single continuous crowd chain, traveling inside of the welded shovel boom, controls the dipper operation. It permits the lowering and raising of the boom without manual adjustments.

Koehring High-Speed Shovels are designed and built to obtain greater yardage on every job. Among the many modern design features contributing to the unusual owner acceptance of these most advanced type excavators are power, light weight, high strength steels, high line speeds, two selective swing speeds, anti-friction bearings, enclosed gears, welded construction and positive steering for any radius.



53-1-41

KOEHRING HEAVY DUTY DRAGLINE

Cable Economy is of great importance in dragline work. Koehring Draglines have many features to decrease cable wear. Some of the most important are, grooved drum barrel, centering cable pull, adjustable dragline fairlead and the swiveling boom point fairlead. This latter advantage maintains a straight cable lead from and to the bucket. The boom point sheaves follow the lead of the cable. All cross pull is eliminated and the bucket is free to swing without cable friction.

Bucket spotting is easy for the operator, with this feature. In dragline operation, rugged crawler construction is essential for dependable traction. Koehring crawlers can be designated in various widths and lengths to suit conditions of the job. They have many advantages specially suited for dragline work. Ease of adjustment, minimum of friction losses, exceptionally long tread life, elimination of dirt traps, great traction power, and generous supporting surface are only a few features of the Koehring crawler assembly. High strength and rigid girders are the backbone of each crawler. The inverted "V" shape automatically shields the rollers and shoes from dirt and stones.

63 2-41

Lansing Concrete Mixers

Lansing 3½-T Trailer Mixer

The 3½-T is a high-speed trailer for large or small contractors on such jobs as small foundations, garage floors, culverts and sidewalks. It is a full one-half bag machine, furnishing 3½ cubic feet of mixed concrete.

The mixing action is very fast, thorough, and each batch of concrete is uniform.

The drum is easily and quickly tilted. The operating wheel is unusually large. The drum may be charged or discharged from either side.

This is a full roller bearing mixer. Hyatt Bearings are used throughout. Alemite lubrication forces grease into the bearings and dust and grit out of them.

The power is furnished by a 2-H. P. Cushman Engine.

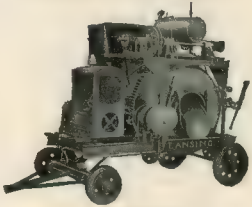
Either Pneumatic-Tired or Hard-Rubber-Tired Wheels can be furnished.

Lansing Contractors' Dump Carts

Box 44"x66" inside—12" deep. Box of 1¼" hardwood, all heavily ironed. Wheels are nearly indestructible, 45" diameter, 3" face. Axles, 2¼" square.

Extra side boards can be furnished if desired.

Lansing Concrete Mixers

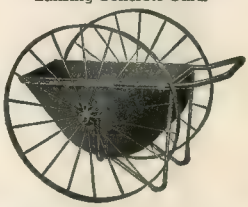


No. 7-S Lansing Mixer

The 7-S Mixer is equipped with a two-cylinder 8-H.P. LeRoi Engine with built-in plate clutch. The capacity of this Mixer is 7 cubic feet of mixed concrete per batch. Thirteen Hyatt Bearings are used in this Mixer, which means easier running and fewer repairs. All operating levers are grouped on drum end of Mixer.

Power Loader Clutch is the expansion ring type and is of simplest possible construction. Has only one easy adjustment. Automatic clutch knockout disengages clutch and sets brake when skip has reached a charging position.

Lansing Concrete Carts



Lansing K-1 Cart

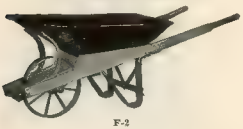
This Improved Lansing Cart is the last word in Concrete Cart construction. The arc welded bodies are water tight and the hot forged axle is so placed that the Cart is perfectly balanced.

Length of body	39 in.
Depth of body	20 in.
Width of body	21 in.
Length over all	52 in.
Width over all	39 in.
Wheels	42 in. dia., 2 in. tread
Weight	250 lbs.
Capacity (Wet)	6 cu. ft.

239-1-43

Lansing Improved "F" Wheelbarrow

Heavy Channel Legs with Shoes, Tray Braces and Cross Stretches of Channel Iron



F-2

Capacity, 3½ cu. ft. (Dry)

F-4½

Capacity, 4½ cu. ft. (Dry)

F-35

With Pneumatic Rubber Tired Roller Bearing Wheels
Capacity, 5 cu. ft. (Dry)

Lansing Mortar Tubs

Pressed Steel—Without Seam or Rivet

Our Pressed Steel Mortar Tub is rapidly taking the place of the old style wooden box. It is lighter, neater, cleaner, and cheaper in the long run, as it will outwear several of the wooden boxes.

These tubs will nest together in carting from job to job. Made of heavy sheet steel pressed to shape with a ⅝-inch rod around the top.

Lansing Pressed Steel Scrapers

No. 1 Lansing—Capacity, 7 cu. ft. Weight, 102 lbs.
No. 2 Lansing—Capacity, 5 cu. ft. Weight, 88 lbs.
No. 3 Lansing—Capacity, 3 cu. ft. Weight, 78 lbs.

Lansing Fresno Scrapers

No.	Width	Capacity	Weight
1	60"	17 cu. ft.	345 lbs.
2	48"	12 cu. ft.	295 lbs.
3	42"	10 cu. ft.	285 lbs.
4	36"	8 cu. ft.	248 lbs.

Lansing Interlocking Concrete Chute

The above Chute is 6 inches deep. It is designed so that sections interlock and permit the assembly of 50 feet without the use of staging or other support.

Lansing Mortar Mixing Boxes

Corners Electrically Welded, Absolutely Water Tight

Box made of No. 14 Gauge Blue Annealed Steel and flanged around a 1¼-inch angle iron to support the top. Handles are out of the way when not in use.

The No. 1 box is made of one sheet of steel.

No. 1—8 ft. wide, 8 ft. long, 12 in. deep.
No. 2—8 ft. 6 in. wide, 7 ft. 6 in. long, 12 in. deep.
No. 3—4 ft. wide, 11 ft. 6 in. long, 12 in. deep.

239-2-39

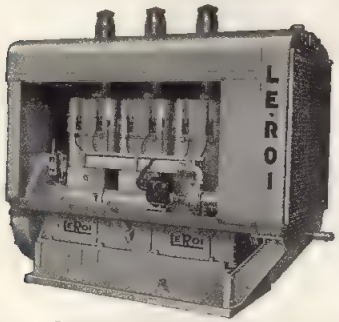
Le Roi Power Units

For Operation on Gasoline, Natural Gas or Artificial Gas

For more than a quarter of a century original equipment manufacturers have been using Le Roi engines as standard equipment on many types of construction machinery. Rollers, crushers, pumps, distributors, finishers, conveyors, saw rigs are just a few of the applications in which Le Roi engines are being used at present.

Because of their durability Le Roi engines have become an integral part of these machines. Users, too, have found these engines to be very dependable as well as economical and efficient to operate. That's why many demand Le Rois on all of their equipment.

Le Roi Model D140 Power Unit.



Le Roi Model RX1S Power Unit.

Now, too, the armed forces have found this to be true and are taking a large part of Le Roi production. The fact that Le Roi Company is today making the same products that it made before the war indicates that these products are in demand and vital to the war.

It is because of this need to supply the armed forces that you may have to wait for your Le Roi. We ask you to be patient because Le Roi Company is doing all it can to satisfy its commercial customers after the demands of the armed forces are met.

Meanwhile keep your present Le Roi-powered equipment in good operating condition so the armed forces may be supplied.

Series	Maximum H.P. Range*	Speed Range	Cooling System	Bore and Stroke	Number Cylinders
V	4- 7	900-1,800	Water	2⅞×3½	Two
X	8- 16	900-1,800	Water	2⅞×3½	Four
D140	15- 30	900-1,800	Water	3½×3⅝	Four
D176	21- 38	900-1,800	Water	3¾×4	Four
D201	24- 44	900-1,800	Water	4 x4	Four
D226	28- 51	900-1,800	Water	4 x4½	Four
D318	35- 54	900-1,500	Water	4½×5	Four
D382	38- 63	800-1,400	Water	4½×6	Four
D471	47- 76	800-1,400	Water	5 x6	Four
RX1	92-139	700-1,200	Water	6¾×7	Four
RX1S	137-209	700-1,200	Water	6¾×7	Six
**RX1V	183-278	700-1,200	Water	6¾×7	Eight
**RX1SV	275-418	700-1,200	Water	6¾×7	Twelve

** These models are not available with steel housings completely enclosing engine.

For the smaller sizes of power units listed above, up to and including the D226 series, there are available a large variety of gear reductions and power takeoffs, both with and without clutches, on which information will be furnished upon request.

* The power ratings listed above apply to complete power units equipped for variable speed service. The data shown were obtained from laboratory tests on fully equipped power units. Production power units are guaranteed to deliver at least 90 per cent of the power shown.

The performance characteristics shown are at sea level. To obtain these characteristics at higher altitudes, deduct 3 per cent from the figures shown for each 1,000 feet above sea level.

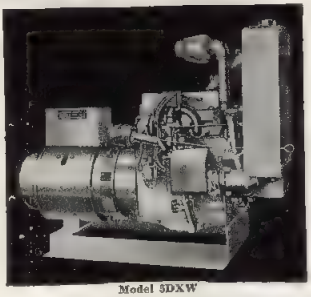
Speed limitations are dependent on the type of service required and will be supplied on request.

If additional data on these engines are required, please communicate with Le Roi Company, through this dealer if you wish, explaining in detail the horsepower required, fuel available, the kind of machine which the engine is to drive and whether service is of standby, intermittent or continuous type.

Le Roi Engine-Generator Units

5 KW
110-120 Volts Direct Current Only

These units, for operating lights, Universal appliances and tools, D. C. radios, and small D. C. motors, have been specially designed for compactness, simplicity and economy consistent with dependable long life service. They are conservatively rated and have high intermittent overload capacity but are protected against heavy continuous overloads by an automatic circuit breaker. Two types of units are available, one without sheet steel housing, the other with full steel housing. Units without housings, as illustrated, are available for immediate shipment from stock at Milwaukee, Wisconsin, or Tulsa, Oklahoma.



Model 5DXW

Specifications

	Units Without Housing	Units With Housing
Model	5DXW	5DXF
Rating, kw.	5	5
Speed, r p m	1 500	1,500
Bore, inches	2⅞	2⅞
Stroke, inches	3½	3½
Number of cylinders	4	4
Displacement, cu. inches	90.8	90.8
B H P. at rated speed	14.2	14.2
Oil capacity, pints	7	7
Water capacity, quarts	10½	12
Gasoline tank, gallons	None	17
Fuels (be sure to specify)	Gasoline, natural gas or both—Both models.	
Generator, type	Ball-bearing Flat compound wound 40° C.	
Starting, type	Hand starting only—Both models	
Net weight, lbs.	660	835
Shipping weight, lbs.	720	925

Standard Equipment

Gasoline Carburetor and Fuel Pump* or Gas Mixing Valve and Regulator or Combination Gas-Gasoline Carburetor, Regulator and Fuel Pump*.
Water Circulating Pump.
Large Radiator.
Combination Overload Circuit Breaker and Switch.
Air Filter and Backfire Arrester.
Mechanical Speed Governor.
High Tension Magneto.
Hand Starting Crank.
Muffler.

* Fuel Pump is not furnished with housed units which have gasoline tank included. If wanted, fuel pump can be furnished instead of gasoline tank at same price.

Extra Equipment

55-Gallon Gasoline Tank and Fittings.

IMPORTANT—When ordering be sure to specify whether fuel will be gasoline, natural gas or both. Also if unit is to be housed and fuel is to be gasoline, specify whether fuel pump or tank is wanted.

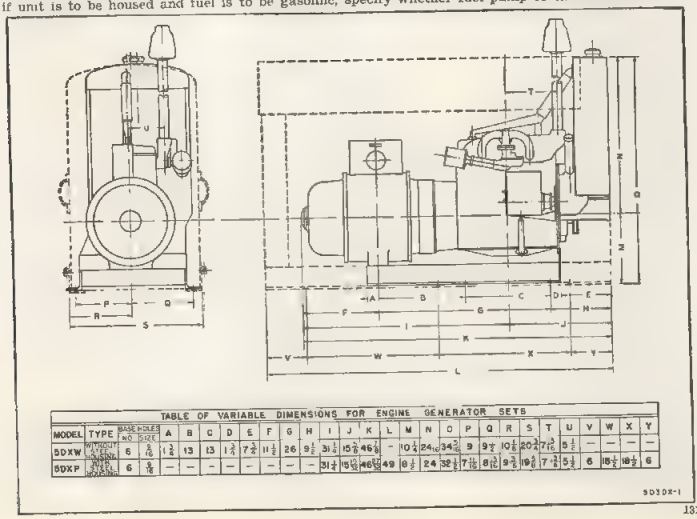


TABLE OF VARIABLE DIMENSIONS FOR ENGINE GENERATOR SETS

MODEL	TYPE	BASE HOLES NO.	BASE HOLES SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
5DXW	WITHOUT SHEET STEEL HOUSING	6	3/8	1 3/8	13	13	1 3/8	7 1/2	11 1/2	26	9 1/2	31 1/2	15 3/8	46 1/2	-	10 1/4	24	34 1/2	9	9 1/2	10 1/2	20 3/4	7 3/16	5 1/2	-	-	-	-
5DXF	WITH SHEET STEEL HOUSING	6	3/8	-	-	-	-	-	-	-	-	31 1/2	15 3/8	46 5/16	49	6 1/2	24	32 1/2	7 1/16	8 1/2	9 1/2	19 3/8	7 1/2	5 1/2	6	15 1/2	18 1/2	6

131-2-42

Mall PORTABLE CHAIN SAWS—Gasoline Engine, Air and Electric

There is a MALL chain saw, gasoline engine, air or electrically driven, for every cutting job. MALL chain saws are indispensable to contractors and engineers, railroads, bridge builders, public utilities, timber operators and road builders for felling and buckling trees and for cutting large timbers. Compactness, simple design, lightweight and portability have been built into MALL chain saws to make them the easiest serviced, fastest cutting chain saws on the market. Heavy timber cutting can be done economically and easily. Each model has an approved safety guard which assures full protection to the operator.

Buckling fallen trees is an ideal job for MALL chain saws. Square butt logs are assured. On tree felling, fast, accurate cuts with low stumps can be made with savings in timber and labor.

MALL GASOLINE ENGINE CHAIN SAWS with gasoline engine mounted directly on the saw are available with 5 h.p., 2-cycle, air-cooled gasoline engines. Sizes—24", 36", 48". Easily transported and operated. Fully protected for maximum safety. A chain saw sharpening attachment for fast accurate sharpening in the field can be furnished as optional equipment. Cuts through a 24" diameter water-soaked oak log in about 1¼ minutes.

The outstanding feature of the MALL gasoline engine chain saw is the automatic clutch which prevents stalling the engine when the saw is pinched or forced too hard. Eliminates hand clutch control. When the operator is ready to cut again, it is only necessary for him to manipulate the gasoline engine throttle controls to the desired engine speed.

MALL PNEUMATIC CHAIN SAWS are ideal for topping poles and cutting poles under water as efficiently as above water; also, for tree felling and buckling, cutting large timbers and lumber. Can be furnished with various sizes of vane-type air motors—24", 36" and 48" capacities. Each chain saw has a special lubrication reservoir for proper lubrication of the saw chain during operation. Cuts through a 24" water-soaked oak log in less than 1½ minutes.

MALL REPLACEMENT SAW CHAINS AND SPROCKETS can be furnished in any length for every make and model of chain saw. You can make faster and more accurate cuts at lower costs with MALL chains.

MALL PNEUMATIC CIRCULAR SAW. This pneumatic circular saw incorporates many time and labor-saving features. Has telescopic spring-operated safety guard which pushes back as the saw cuts through the material. Exhaust air keeps the cutting line clear. Observation glass permits operator to follow the cutting line. Powerful air motor. Can also be furnished with special blades or cut-off wheels for cutting concrete, sheet aluminum, terrazzo or tile. Free speed: 1400 r.p.m., 12" blade. Base adjusts from 1⅜" to 4½". Cutting capacity: 4½"—3⅜" at 45-degree angle. Net weight: 22 pounds.

PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

38-1-43

Colorful Imported Mexican Pottery

Butlers presents on these two pages merchandise that is the handicraft of Mexican Natives. When we use the word handicraft we mean made by hand. Because it is hand-made, no two pieces are exactly alike—they will lack the symmetry of domestic machine-made goods to which you are accustomed. Therefore when you open up this merchandise and find twelve pieces of one number not exactly alike, please do not send it back. The lack of symmetry rather than prove a detriment, should add to the sale of these goods by its charm and originality. Nearly all articles produced by Mexican natives are authentic reproductions of age-old designs.

MEXICAN NATIVE ARTS ASSORTMENT OF EARTHENWARE

$11.40 Asst.

- Big 24-Piece Assortment in a Variety of Clever Shapes and Sizes
- Every Piece Hand Made and Hand Painted by Native Artists
- Highly Decorative Colors and Designs Attract Immediate Notice

Our latest pottery assortment of Mexican ware—pieces range in height from about 6½ in. to about 16 in. A collection of truly unique shapes and designs—one that will attract immediate attention and often sell on sight. For there's something so entirely different about these [illegible] Mexican Art [illegible] Mexican [illegible] shapes [illegible]

Decorative molds vary from ancient to ultra-modern. In these pieces the native Mexican artist gives his fullest expression of color values perfectly blended or vividly contrasted. Designs may vary from pure Aztec, geometrical or floral to modern molds of animals and human forms [illegible] Burlap Assortment [illegible] Mexican Molds [illegible]

85-R1008—One 24-Piece Assortment in package. 20 lbs. . . . . Assortment 11.40

⊗ 6 STYLES CANELA ART POTTERY

$3.00 Doz.

- Indian Floral Patterns in Tans and Browns
- Hand Made No Two Pieces Exactly Alike
- Hand Decorated by Native Mexican Artists

A charming group. Names of pieces and approximate sizes

Water Bottle, 8x8½ in.	**Handled Vase,** 5¼x6 in.
Water Bottle, 8x7½ in.	**Jug Vase,** 4¾x4¾ in.
Water Bottle, 8¼x7 in.	**Handled Jug,** [illegible]

You get 2 each of 6 shapes in package.
Available after May 1.
85-0831 1 doz pieces in package . . . . . Doz. $3.00

⊗ 12 STYLES TONALA INDIAN DESIGNS

86¢ Doz.

- Mexican Opaque Pottery in Blue, Green and Tan Against Terra Cotta Background
- Small Sizes, Excellent for Shell Decoration

A very [illegible] Mexican [illegible] Water Bottles [illegible] many [illegible] and [illegible] Mexican [illegible] Parrot [illegible] Many [illegible] and reproductions of age-old Indian designs.
85-0878—2 doz pieces in pkg. (2 of each style) . Doz. 86¢

COLORFUL HAND PAINTED MINIATURES

Irresistible pieces. 24 jugs and vases, 1½ to 2½ in. high. Geometric and conventional Indian [illegible] A big [illegible]
85-0501/2 [illegible] Doz. 80¢

6 STYLES CANELA INDIAN WARE

Canela Indian designs in browns and tans against terra-cotta background. Names of pieces, sizes

Vase, [illegible]	**Jug,** [illegible]
Vase, [illegible]	**Jug,** [illegible]
Water Bottle, 7¾x7½ in.	
Water Bottle, 9¾x9½ in.	

You get 6 each of 6 shapes.
Available after May 1.
85-0571 [illegible] Doz. 76¢

SALTS AND PEPPERS

Novel Mexican design. Earthenware body decorated with [illegible] Pepper [illegible] Each red [illegible] figurines against contrasting background. Size 1¾x2½x2 in. Without cork. [illegible]
85-0664 [illegible] Doz. 80¢

SALTS AND PEPPERS

Mexican Cactus and Sisal [illegible] shapes to pair, Indian Man and Indian Woman. Size about 1½x2x2 in. 1 doz pairs each style [illegible]
85-0808 [illegible] Doz. 80¢

MEXICAN ASH TRAYS

[illegible] Mexican [illegible] blue and brown [illegible] tion on terra-cotta [illegible] ground. [illegible]
85-470 [illegible] Doz. 80¢

Double-Duty

SEMI-PORCELAIN DRIPOLATORS

SEMI-PORCELAIN SALT BOX WITH LID

Adds appearance as well as utility to a kitchen. Glazed semi-porcelain in embossed Mexican floral and leaf design. Overall height 5½ in. Assrtd. colors: bright white, turquoise and yellow.

55-R353—1 doz in carton. 28 lbs. . . Doz **4.10**

New! Semi-Porcelain MATCHED KITCHENWARE

Remove top section and these Dripolators become attractive Tea Pots (see small view at left).

ALL SEMI-PORCELAIN—NO METAL PARTS!

$8.95 Doz 4-Cup — **Fill the Need for Metal Substitutes. Make Delicious Drip Coffee, or Tea. Attractive Embossed Mexican Design** — **$11.40 Doz 6-Cup**

New Dripolators that replace restricted metal coffee makers—every part in glazed semi-porcelain! Remove the top sections and they become attractive tea pots. Prices are unusually low . . . your profit margin is high. Each Dripolator comes with a sample package of 25 filter papers and instructions for making delicious drip coffee. Equally assorted colors: bright white, turquoise and yellow. Put these fast-selling items in your store!

(A) **55-R354—4-Cup Dripolator.** ½ doz in carton. 24 lbs . . . Doz. **8.95**

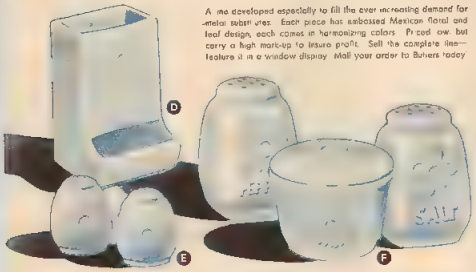
(B) **55-R355—6-Cup Dripolator.** ½ doz in carton. 36 lbs . . . Doz **11.40**

(C) FILTER PAPERS. Required by Dripolators above for making coffee. Wash in cold water. 50 sheets to an envelope. Big repeat item.

55-482—2¾-Inch Diameter. For use with 55-R354 four-cup Dripolator above. 12 envelopes in display carton . . . Doz **72c**

55-483—2¾-Inch Diameter. For use with 55-R355 six cup Dripolator above. 2 envelopes in display carton . . . Doz **72c**

A line developed especially to fill the ever increasing demand for metal substitutes. Each piece has embossed Mexican floral and leaf design, each comes in harmonizing colors. Priced low, but carry a high mark-up to insure profit. Sell the complete line—feature it in a window display. Mail your order to Butlers today.



GLAZED SEMI-PORCELAIN MATCH BOX

(D) New colorful kitchen accessory in embossed Mexican floral and leaf design that matches other pieces on this page. 5¼ inches high. Assrtd bright white, turquoise and yellow.

55-R358—3 doz in carton. 44½ lbs . . . Doz **2.00**

2¾-INCH SALT AND PEPPER SHAKERS

(E) Embossed Mexican design. Table size. Assrtd. bright white, turquoise and yellow. (Early orders assrtd. all white and turquoise.)

55-R344—1 doz pairs in ctn. 7 lbs. Doz prs **2.00**

4-PIECE SEMI-PORCELAIN RANGE SET

(F) New attractive set in embossed Mexican floral and leaf design. Grease jar and cover 3¾ in. high; salt and pepper shakers 4⅛ in. high. Assrtd. colors: bright white, turquoise and yellow.

55-R387—1 doz sets in ctn, 34 lbs. Doz sets **5.25**

4¾-INCH SALT AND PEPPER SHAKERS

Same as in Range Set above. Assrtd. colors: bright white, turquoise and yellow. (Early orders assrtd. all white antique ivory and yellow.)

55-R342—1 doz pairs in ctn. 31 lbs Doz prs **3.60**

Flower Pots & Jardinieres in Matching Mexican Design

3 SIZES FLOWER POTS WITH SAUCERS

Saucers attached. Embossed Mexican floral design.

55-R240—3 x 3⅛ In. Assrtd. matt white and turquoise. 1 doz in carton, 16½ lbs Doz **2.45**

55-R741 4½ x 4⅛ In. Assrtd. matt white and antique ivory. 2 doz in ctn. 38 lbs Doz **1.72**

55-R743 2⅜ x 3¼ In. Assrtd. matt white, antique ivory and turquoise. 1 doz in carton. 31 lbs Doz **84c**

3 SIZES DECORATED JARDINIERES

Handsomely designed Mexican floral embossments.

55-R720—5½ x 5¾ In. Assrtd. matt white and turquoise. 1 doz in carton, 31 lbs Doz **3.35**

55-R738 5½ x 4¾ In. Assrtd. matt white, antique ivory and turquoise. Packed 2 doz in carton. 42 lbs Doz. **1.95**

55-R739 4½ x 4 In. Assrtd. matt white and turquoise. 2 doz in carton. 30 lbs Doz **1.28**

40-OZ. SEMI-PORCELAIN JUG

(G) With ice lip. Embossed Mexican design. Assrtd. bright white, yellow, turquoise. (Early orders assrtd. yellow, dk. blue, dk. green, all white.)

55-R318—2 doz in ctn. 42 lbs Doz **2.85**

5-CUP SEMI-PORCELAIN TEA POT

(H) Embossed Mexican design. Assrtd bright white, yellow, turquoise. (Early orders assrtd. yel., dk. green, dk. blue and all white.)

55-R347 2 doz in ctn. 42 lbs Doz **2.85**

SUGARS AND CREAMERS

(J) 7 oz. size. Embossed Mexican floral and leaf design that matches other pieces on this page. Suggest to your customers. Assrtd. bright white, yellow and turquoise colors. (Early orders assrtd. powder blue, antique ivory and turquoise.)

55-R343—1 doz sets in ctn. 16 lbs. Doz sets **2.12**

"MUNICIPAL" STREET SIGNS

Reg. U. S. Pat. Office

Type 32-CY
Criss Cross
Street Sign
With Post

"MUNICIPAL" SIGNS ARE STANDARD IN LEADING CITIES AND TOWNS THROUGHOUT THE U. S.

ALL "MUNICIPAL" PORCELAIN ENAMEL STREET SIGNS FURNISHED WITH FRAMES ARE

GUARANTEED for 10 YEARS

Detailed Specifications and Prices Furnished on Request

Type 97-WO
With Posts

"MUNICIPAL" WING SIGNS

CAN BE FURNISHED TO FIT EXISTING LIGHTING POLES

THIS SIGN CAN ALSO BE MADE WITH BLOCK NUMBERS IN UPPER PANEL

Type PS-13
With Post

"MUNICIPAL"

CRISS CROSS STREET SIGNS

CAN BE FURNISHED WITH EMBOSSED, BAKED, PAINTED, ENAMEL SIGN PLATES

This Type of Sign Is Assembled Without Frames, But With Supporting Fixtures Only

For Complete Line of Other Types of "Municipal" Street Signs, Send for Catalog M-40

530-1-41

CUT-OUT BOOKS WITH '43 DOLLS

Favorite characters from fact and fiction! All in Butlers brand new cut-out books designed for hours of indoor fun!

MANY 1943 COPYRIGHTS!

"Air, Land and Sea Dolls"
- 10¼x14 Inch Size
- Full-Color, Die-cut Covers
- 16 Pages Of Costumes

80c Boxed

They're all here . . . the Army, Navy and Air Corps. Handsome men and pretty girls. 16 pages of snappy, smart uniforms and costumes.

60-6121—1 cut pkg. Doz 80c

"Red, White and Blue Dolls"
- 10¼x15¾-in. Size
- Patriotic Color Covers
- Quaint Die-cut Dolls

80c Boxed

Absolutely irresistible 16 pages of round-faced boy and girl dolls with adorable costumes. Photos of value and sales appeal

60-6125—1 doz in pkg. Doz 80c

Ⓖ 12 Pages—2 Popular Titles

Full color covers. Approximately 6x9 inches. Each book has 12 pages of fun and frolic, including 2 pages of Paper Dolls' party and sport costumes.

60-6105—2 doz in pkg. Doz 38c

Ⓗ 2 New Sure-To-Sell Titles

11x8 in. Full color covers. Each book has 12 pages of graceful fashions and 2 pages of costumes. Six Pretty Paper Dolls. 16 pages in all. Two titles.

60-6104—2 doz in pkg. Doz 40c

Ⓚ 16 Pages—2 Brand New Titles

Full color covers. 6x14 inches. Each book has 12 pages of fun and frolic. Modern Girls Paper Dolls, 2 pages with 6 outfits. 10 pages of pretty costumes.

60-6212—2 doz in pkg. Doz 40c

Ⓛ "Joan Carroll"

80c Boxed

- 10¼x12⅝ in Size
- 16 colorful pages
- Full color covers
- 2 large tear paper dolls

16 pages of complete entertainment for every boy and girl. Cut-out paper dolls with many outfits. Joan Carroll paper doll in swim suit. Inside back cover shows how to make a Soldier Cap of paper.

60-6133—1 doz in pkg. Doz 80c

Ⓜ 16 Pages—"Mary Martin"

10¾x15¾-in. Four full color covers. Each book has 16 pages of cut-out fun. Mary Martin paper doll in evening gown, street and sun wardrobe.

60-6134—1 doz in pkg. Doz 82c

16 Pages—Latest "Quiz Kids Paper Dolls"

10¾x15¾-in. Full color covers. Quiz Kids paper dolls and 12 pages of full color costumes. Also 2 pages with interesting facts about the Quiz Kids. Ask them questions to test your knowledge with the cut-out Quiz Kids Book. Get yours at once. Two to have

60-6144—1 doz in pkg. Doz 80c

16 Pages—Military Wedding

11¾x10-in. Four full color covers. Die-cut girls and soldiers paper dolls. 10 pages of gorgeous wedding clothes and smaller uniforms. Adorn with bride's bouquet (color and value)

60-6147—1 doz in pkg. ..Doz 80c

16 Pages—"Orphan Annie" Paper Dolls

10¾x15¾-in. Four full color covers. Orphan Annie paper dolls and many colorful costumes for all. Every child adores this famous pair. They will love to play Paper Dolls with Orphan Annie coloring book.

60-6211—1 doz in pkg. Doz 80c

16 Pages—2 Exciting Titles with Brand New Dolls

6¾x9-in. Four full color covers. Sparkling Paper Dolls. 2 dolls and many costumes. Each book has 12 pages of fun and frolic. Paper dolls, costumes, more. Jane Arden, Paper Doll Star of Radio, has a complete costume. Shirley Temple

60-6139—2 doz in pkg. Doz 80c

"Army and Navy Wedding Party"

11x15¾-in. Full color covers. Two cut-out paper dolls. Bride and groom with wedding party. Army and Navy uniforms. Bride's gown and trousseau. Two complete costumes. Mail-flung announcement

60-6218—1 doz in pkg. ....Doz 82c

"Uncle Sam's Little Helpers"

10¾x15¾-in. Four full color covers. Boy and girl paper dolls. Uncle Sam's little helpers in uniform. Keep 'em busy with paper soldiers and

60-6239—1 doz in pkg..... Doz 82c

4 Titles Every One A Regular Chain Store Value!

11x14-in. Full color covers. Two sheets of paper dolls. Each book has 12 pages of costumes. Each current popular film star Career Girls Paper Dolls. Glamorous Junior Prom Paper Dolls with 12 pages of costumes. Paper Dolls of the Stars with 12 pages of costumes. Have Yank 4 he-cut dolls 20 costume pages

60-6226—1 doz in pkg. Doz 80c

20 Pages—"Miss America" Paper Dolls

11¾x15¾-in. Full color covers. Miss America paper dolls and 16 pages of costumes. Two sheets of paper dolls and costumes printed on both sides. Each has a separate photo of the doll and an artist style portrait. Turnabout

60-6129—1 doz in pkg. Doz 84c

"Glenn Miller and Marion Hutton"

10¾x15¾-in. Two full color covers. Two sheets of paper dolls printed on both sides. Each has a separate photo of the doll and an artist style portrait. Turnabout

60-6213—1 doz in pkg. Doz 82c

"Benny Goodman and Peggy Lee"

10¾x15¾-in. Four full color covers and 12 pages of paper dolls printed on both sides. Colorful turnabout dolls

60-6206—1 doz in pkg. ...Doz 82c

WATCHES for DOCTORS, NURSES and Specialized Use

Smart RACINE WATERTIGHT TIMEPIECES

★ Non-Magnetic; Equipped with NIVAROX Hair Springs and GLACIDUR Metal Balances
★ Watertightness assured by three tests—in water and atmospheric pressures
★ Equipped with fine Gallet Movements; Each model in an attractive gift box

FOR DEFENSE

NEW RACINE (Thin Model) WATERPROOF

Latest wafer-thin Racine waterproof watch 10½ lignes dependable 15-Jewel Gallet movement, Firth Staybrite Steel Case. Non-magnetic

No. 986—15 Jewels $54.05
No. 986R—Radium Dial 54.05

FOR INDUSTRY

GALLET WATERPROOF WITH AUTOMATIC MOVEMENT

Remarkable new waterproof watch—the last word in automatic self-winding timekeepers. Equipped with 15-Jewel, 10½ lignes Gallet movement. Cased in Firth Staybrite Steel. Nivarox Hair Springs, Glucidur Metal Balances Non-magnetic

No. 964—15 Jewels, Self Wind $68.70
No. 964R—Radium Dial 68.70

FOR SCIENCE

RACINE WATERPROOF WATCH

Guaranteed watertight because of a patented new process of case construction. It is stainless, rustless, solderless. The case is famed Firth Staybrite Steel. 10½ lignes, non-magnetic Gallet movement.

No. 812—15 Jewels $53.90
No 812/R—Radium Dial 53.90
No. 913—Yellow Gold Filled Case 49.00

FOR SPORTS

GALLET NUN'S WATCH

Accurate 10½ lignes, Gallet 15-jewel movement. Dial features sweep-second hand

No. 962—Sterling Silver Case $39.90
No. 962R—Radium Dial 39.90

GALLET NUN'S WATCH

Accurate 10½ lignes, Gallet 15-jewel movement. Dial features sweep-second hand.

No. 947—Sterling Silver Case $39.90
No. 947R—Radium Dial 39.90

NEW RACINE (Thin Model) WATERPROOF

Smart wafer-thin Racine waterproof watch; 10½ lignes; fine 15-Jewel Gallet movement; Firth Staybrite Steel Case; Non-magnetic.

No 985—15 Jewels $54.05
No. 985R—Radium Dial 54.05
No. 984—8¾ lignes 54.05
No. 984R—8¾ lignes—Radium Dial 54.05

FOR DOCTORS

GALLET WATERPROOF WITH "INCABLOC" FEATURE

Special, new waterproof watch, 11 lignes, thin model. High-grade 15-Jewel Gallet movement. Firth Staybrite Steel Case. Featuring INCABLOC anti-shock equipment, built into movement also Glucidur balance, Nivarox Hair Springs. Non-magnetic

No. 975—15 Jewels $54.05
No. 975R—Radium Dial 54.05

FOR NURSES

DOCTORS' WATERPROOF WATCH

Busy doctors will treasure this stainless steel watch. Another waterproof and rustproof model made by the new patented process. Sheffield Steel Case. Accurate 10½ lignes, non-magnetic Gallet movement. Dial features sweep-second hand.

No. 711—15 Jewels $53.90
No. 711/R—Radium Dial 53.90
No. 911—Yellow Gold Filled Case 53.90

FOR TECHNICIANS

NURSES' WATERPROOF WATCH

This smart ladies' model has the same unique features as the other Racine waterproof watches. Dial features sweep-second hand. Equipped with leather strap. 8¾ lignes, 15-jewel movement. Non-magnetic

No. 830/13 $51.80
No. 830/15/R—Radium Dial 51.80
No. 830—Without Sweep Hand 49.00
No. 830R—Without Sweep Hand, Radium Dial 49.00

FOR SPECIALISTS

NURSES' WATCH WITH SILK OR LEATHER CORD

Featuring sweep-second, 8¾ lignes, fine Gallet movement. 10Kt. yellow gold filled case. 15 jewels. Non-magnetic

No. 847 $40.60
No. 857—Nurses Strap, 15 Jewels 43.00

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

KITCHEN BOWLS

Offer You Now Increased Profits

We've revamped and expanded this popular line of kitchen crockery to more completely fill your selling needs . . . and to earn more profits for you!

3-Piece Set

57c

- Promote and Sell All 3 Popular Sets—3-Piece, 4-Piece and 5-Piece
- Each Bowl in Set A Different Size—Each Bowl A Different Color
- All 3 Sets Are Attractive, Useful and Low Priced—Assured Best Sellers

Semi-Porcelain Rainbow Kitchen Bowl Sets

These Rainbow Mixing Bowl Sets combine 3 important features to make them full measure of value for your customers—and big profit producers for you!

Usefulness . . . Smooth rounded inside bottoms make mixing easy, and they have so many other kitchen uses . . . for table service, for fruit and for general utility needs

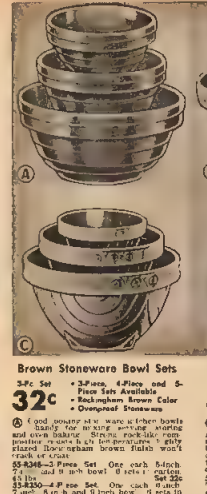
Attractiveness . . . with plenty of color splash for the modern kitchen . . . striking colors to catch a woman's eye when she goes shopping. Every one practically shaped. Bowls made of highly glazed, semi-porcelain, smoothly rounded inside for easy mixing, heavy enough to resist breakage. Have handsomely ribbed exteriors for easy handling

Low Price . . . of most composition and to make it easy for customers to buy

55-R552—3-Piece Bowl Set. Assorted 6-inch pastel yellow bowl, 7-inch dusty rose bowl and 8-inch turquoise bowl to set. 6 sets in carton, 30 lbs. ..... Set 57c

55-R542 4-Piece Bowl Set. Assorted 5-inch burgundy bowl, 6-inch antique ivory 7-inch dark green and 8-inch dark blue to set (when present colors are sold out, the following colors will be substituted 5-inch pastel yellow bowl, 6-inch fire blue, 7-inch dusty rose and 8-inch antique ivory) 6 sets in carton, 30 lbs. ..... Set 65c

55-R544—5-Piece Bowl Set. Assorted 5-inch burgundy bowl, 6-inch antique ivory bowl, 7-inch dark green bowl, 8-inch dark blue bowl and 9-inch yellow bowl to set (when present stock is exhausted the following colors will be substituted 5-inch pastel yellow bowl, 6-inch fire blue, 7-inch dusty rose, 8-inch antique ivory and 9-inch turquoise bowl). 6 sets in carton, 60 lbs. ..... Set 87c



Brown Stoneware Bowl Sets

3-Pc. Set

32c

- 3-Piece, 4-Piece and 5-Piece Sets Available
- Rockingham Brown Color
- Overproof Stoneware

(A) A good pantry set of easy kitchen bowls handy for mixing, serving, storing and even baking. Sturdy, rock-like ware positive protection for temperatures. Highly glazed brown Rockingham finish won't crack or chip.

55-R345—3-Piece Set. One each 5-inch, 7-inch and 9-inch bowl. 6 sets in carton, 44 lbs. **Set 32c**

55-R350—4-Piece Set. One each 5-inch, 7-inch, 8-inch and 9-inch bowl. 6 sets in carton, 50 lbs. **Not available until April 15** ..... **Set 44c**

55-R351—5-Piece Set. One each 5-inch, 6-inch, 7-inch, 8-inch and 9-inch bowl. 6 sets in carton, 60 lbs. **Not available until April 15** ..... **Set 52c**

Fluted Earthenware Bowl Sets

3-Pc. Set

33c

- Selection of 3-Piece, 4-Piece and 5-Piece Sets
- Highly Glazed Solid Colors
- Fluted Earthenware

(B) A useful selection at a low price. Earthenware mixing bowl sets attractive in appearance and use in price range for table use for mixing and for storing. Of modern, fluted build, color with blue and white banded border design. Sure an timbered and fluted to give added attraction and to make bowls easy to handle

55-R514—3-Piece Set. One each 5½-inch, 7¾-inch and 9½-inch bowl. 6 sets in carton, 46 lbs. ..... **Set 33c**

55-R516—4-Piece Set. One each 5½-inch, 6¾ inch, 7¾-inch and 8¾-inch bowl. 6 sets in carton, 56 lbs. ..... **Set 38c**

55-R517—5-Piece Set. One each 5½-inch, 6¾ inch, 7¾ inch, 8¾ inch and 9¾ inch bowl. 6 sets in carton, 66 lbs. ..... **Set 52c**

3-Piece Earthenware Bowl Set

34c

- 5-In. Maroon, 7-In Turquoise and 9-In. Blue
- Attractively Embossed
- Well Made Earthenware

(C) Attractive 3-piece set of decorated earthenware mixing and kitchen utility bowls, each bowl a different color and each a different size. Set is nestable, includes one 5-inch maroon bowl, one 7-inch turquoise bowl and one 9-inch blue bowl. Pleasingly finished in Rockand are brown with highly glazed surface inside and out. Attractively embossed with leaf design. Made of heavy earthenware clay. Set is complete as pictured.

55-R415—4 sets in crate, 40 lbs. Not stocked Chicago and Baltimore. Set 34c

4-Piece Stoneware Bowl Set

40c

Set

- 6, 7, 8 and 9-In., Burgundy, Green, Brown, Blue
- Attractive Ribbed Sides
- Overproof Stoneware

(D) Handsome set of stoneware kitchen bowls, useful for serving, mixing, storing and for oven bakings. Each bowl a different size and different color—set includes one each 6-inch burgundy bowl, 7-inch green bowl, 8-inch brown bowl and 9-inch blue bowl. The rock-like hardness of stoneware plus the craze-resisting high glaze makes each bowl overproof. Smoothly rounded inside surface provides for easy mixing. Four colors for attractive serving. Order today by mail from Butlers!

55-R523—6 sets in carton, 48 lbs Set 40c

Selection of Earthenware Bowls

3-Pc. Set

34c

- Available in Four Individual Sizes and Three Sets
- Attractively Embossed Sides
- Ivory Colored Earthenware

Earthenware bowls with square bases and fancy embossed decoration. Ivory glazed sides with white blue band between two dusk bands.

55-R621—8½-Inch. 2 doz in package, 60 lbs. ..... **Doz 1.44**

55-R622—9½ Inch. 1½ doz in package, 60 lbs. ..... **Doz 1.94**

55-R625—10½ Inch. 1 doz in package, 60 lbs. ..... **Doz 2.55**

55-R623—11½-Inch. ½ doz in package, 60 lbs. ..... **Doz 2.95**

55-R624—3-Piece Set. 5½, 7¾ and 9½ inch 3 sets in pkg. 45 lbs. ..... **Set 34c**

55-R626—4-Piece Set. 6¾, 8¾, 7¾, 9½ inch 6 sets in ctn, 90 lbs ..... **Set 37c**

55-R627—5-Piece Set. 5½, 6¾, 7¾, 8¾ and 9½-inch 6 sets in carton, 95 lbs. ..... **Set 52c**

Ribbed Semi-Porcelain Sets

3-Pc. Set

63c

- Selection of Two Individual Sizes and Three Sets
- Assorted Colors to Suit
- Deep Shape, Ribbed

Highly glazed, beautifully finished mixing bowls made of the finest domestic semi-porcelain. The especially hardened composition and durable glaze makes these bowls overproof—can be used for baking as well as mixing, serving and storing!

55-R536—3-Piece Set. 5-in. ivory, 7-in rose and 9-in yellow. 6 sets in carton, 50 lbs. **Not stocked Chicago** ..... **Set 63c**

55-R567—4-Piece Set. 5¾-in ivory 6¾-in brown, 7¾-in rose, 8¾-in yellow. 6 sets in ctn. 90 lbs ..... **Set 97c**

55-R527—5-Piece Set. 5 and 6-in ivory 7-in rose and 8 and 9-in yellow. 3 sets in carton. 90 lbs. **Not stocked Chicago** ..... **Set 92c**

55-R568—7½-Inch Bowl rose color. 2 doz in carton. 70 lbs. ..... **Doz 2.00**

55-R569—9½-Inch Bowl, yellow color. 1½ doz in carton. 60 lbs ..... **Doz 2.45**

18-Ounce Decorated Bowl

(E) Fast-selling utility bowl, 18-ounce capacity, measures 4¾ inches in diameter. Made of highly glazed earthenware, finished in pleasing white with stars and stripes decoration.

55-R110—Maroon Decoration. 4 doz in ctn. 50 lbs. ..... **Doz 84c**

55-R111 Blue Decoration. 4 doz in ctn. 50 lbs. ..... **Doz 84c**

10¼-Inch Earthen Crock

(F) Large size earthenware crock for baking, measures 10¼ inches in diameter. Decoratively embossed with floral design. Glazed inside and out. Equally assorted colors of blue and white, with highly glazed surfaces.

55-R535—1 doz in package, 60 lbs. ..... Doz 2.25

4-Piece Mexican Style Range Set

(G) Earthenware range set consisting of salt and pepper set and drip jar, attractively glazed and colored in Mexican style. Brightly decorated outside, finished with high glaze ware. Set consists of One 2-pint drip jar with cover matching 6 inches high, 4 inches in diameter, two medium size red pepper shape salt and pepper shakers each with cover, and one salt box shape with cover, assorted Mexican decals

55-R528—1 set in carton. 14 lbs. Not stocked Chicago ..... **Doz sets 3.50**

4-Piece Rockingham Brown Range Set

(H) 4 piece set made of domestic earthenware with attractive fruit embossing. Highly glazed Rockingham brown finish. Set consists of One attractively shaped drip jar with cover, measuring 5½ inches high and 7 inches in diameter two large salt and pepper shakers, 3½ inches high with cover and large mouth, easy pouring and easy to clean.

55-R529—1 doz in carton. 36 lbs Doz sets 4.00

A BRIDAL GIFT OF LASTING LOVELINESS

A service of beautiful Salem Dinnerware reflects the good taste of the giver and will assuredly render the bride long years of pleasure and usefulness.

"BRIARCLIFF"

A conventional type pattern of exquisite beauty

Three sprays of delicate pink roses, blue forget-me-nots with light green leaves adorn the rim of this pattern

A line of old gold color encircles the edge and the well of each dish. The handles and knobs are treated with the same soft brown and gold color

Briarcliff is proving a popular seller and the demand is steadily increasing. This is a pattern which wears well and doesn't become tiresome. The shape is light weight Symphony dinnerware

18320.	35 Piece Set	**$14.65**
18321.	53 Piece Set	**21.70**
18322.	100 Piece Set	**42.60**

"EMPRESS"

Here is another popular seller in the wide ivory band treatment. Six dainty florals adorn the rim with a cluster of orange, pink, blue and yellow flowers in the center. A 23K gold line encircles the edge and a fine Meissen green line trims the ivory band in the well of each dish

The shape is the popular light weight Symphony ware, gracefully styled and blending harmoniously with this lovely pattern.

18326.	35 Piece Set	**$17.50**
18327.	53 Piece Set	**26.00**
18328.	100 Piece Set	**51.20**

"FLOWER BASKET"

A charming pattern sparkling with 23 karat gold. A brown wicker basket of old-fashioned flowers with rose, blue, yellow and brown colors predominating adorns the center. A wide etched band of 23-karat gold with Grecian design in it encircles the edge of each dish supported by a fine gold line on the verge. A table set with this Flower Basket decoration is a delight to behold and will be the envy of all your friends. Here is a pattern that wins its way deeper into your heart each time you use it and which will be a source of joy and pride for years.

18323.	35 Piece Set	**$15.30**
18324.	53 Piece Set	**22.90**
18325.	100 Piece Set	**44.20**

"DEBUTANTE"

How exquisitely lovely you will say when you behold Debutante. Hitherto available only in the most expensive ware Salem presents this enchanting type decoration at a price that will pleasantly surprise you. The decoration consists of a full border of dainty flowers over a wide ivory band. A line of 23-karat gold encircles the edge of each dish and a fine green line borders the ivory band on the inside. A delicate floral spot adorns the center. The gracefully styled and light weight Symphony shape of the ware happily harmonizes with this delightful pattern

18329.	35 Piece Set	**$19.70**
18330.	53 Piece Set	**29.40**
18331.	100 Piece Set	**57.90**

FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from us which does not prove entirely satisfactory on receipt

DINNERWARE OF DISTINCTION BY SALEM

"SOVEREIGN"

Another winner in the ivory series This pattern appeals to that group who appreciates something more highly ornate and flashy in a dinner service

The decoration consists of a lovely floral center, of pink blue orange and yellow flowers set in a cluster of green foliage placed in the center of each dish. A wide ivory band comes down into the well of each dish. An elaborate 23-kt. gold filigree adorns the rim, plus a 23-kt gold edge line, with a Meissen green line bordering the ivory

This pattern is supplied on light weight Symphony shape, gracefully styled with wide low rims

18210.	35 Piece Set	**$16.90**
18211.	53-Piece Set	**25.20**
18212.	100 Piece Set	**49.50**

Salem Dinnerware is Shipped F.O.B. Ohio Factory.

35-Pc. Set—Composition No. 327

Shipping Wt. 25 lbs

6 Cups
6 Saucers
6 Dinner Plates 9"
6 B & B Plates 6"
6 Fruit Dishes
1 Meat Platter 11"
1 Open Veg Dish 8"
1 Cream Pitcher
1 Cov Sugar (2-pcs)

53-Pc. Set—Composition No. 490

Shipping Wt 38 lbs

8 Cups
8 Saucers
8 Dinner Plates 9"
8 B & B Plates 6"
8 Fruit Dishes
8 Coupe Soups 7"
1 Meat Platter 11"
1 Round Veg Dish 8"
1 Cov Sugar (2-pcs)
1 Cream Pitcher

100-Pc. Set—Composition No. 975

Shipping Wt 80 lbs

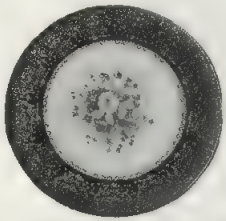
12 Cups
12 Saucers
12 Dinner Plates 10"
12 Pie Plates 7"
12 B & B Plates 6"
12 Coupe Soups 7"
12 Fruit Dishes
6 Oatmeal Dishes
1 Open Butter Dish
1 Deep Open Veg Dish 8"
1 Gravy Bowl
1 Meat Platter 11"
1 Meat Platter 13"
1 Cream Pitcher
1 Covd Sugar (2-pcs)
1 Covd. Veg Dish (2 pcs)

The 53 and 100-piece Initial sets are slightly different in composition from those listed above.

"INITIAL"

This richly gold embellished decoration is the answer to every woman's desire for a Personalized dinner service. Each piece carries her own initial in 23-karat gold, further enhanced by three gold bands on the edge of the ware and gold on the handles. Featured in only three size sets which are carried in stock ready for immediate shipment

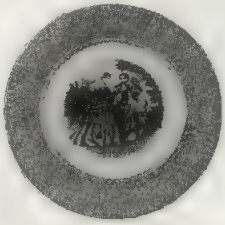
18213.	35-Piece Set	**$16.20**
18214	53-Piece Set	**23.76**
18215.	100-Piece Set	**49.40**



"CALIFORNIA BOUQUET SERVICE PLATES"

Striking floral design with heavy embellished border will appeal to the beauty of every piece of glassware and dinnerware on the table. Borders available in either rich maroon or deep-water blue. The colored rims are overlaid with a heavy gold filigree of 23 kt gold. A wide gold line adorns the edge, supported by a narrow gree on the inside shoulder of each plate. Center design shows a bouquet of pink and blue and green leaves surrounded by dainty pink and yellow summer flowers

18216.	Maroon Border Dozen	**$19.90**
18217.	Blue Border Dozen	**19.90**

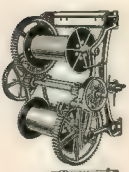


"GODEY PRINT SERVICE PLATES"

Nothing could be lovelier than this modern dinner table setting, based on the old time themes of Grandmother's day of vivid colors and lavender and lace. Three different Godey Prints are featured throughout the Service Plate set, each authentically reproduced in warmth of color, quaintness of style and clearness of detail. Wide heavy border comes in maroon or blue with delicate gold filigree over the color and shoulder of the plate. The edge is banded in 23-karat gold. Truly a delightful pattern for anyone who cherishes the beauty and loveliness of things old-fashioned, brought down to us from days gone by

18218.	Maroon Border Dozen	**$21.40**
18219.	Blue Border Dozen	**21.40**

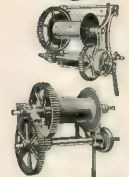
FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from us which does not prove entirely satisfactory on receipt



Sasgen Double Drum Double Purchase Winch

Gears and Frame Made of Best Malleable

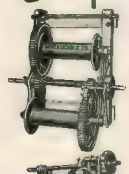
No.	Diameter and Length of Drum, Inches	Gear Ratio Inches	Capacity—Lift 2 Men 2 Lines, Lbs.	Capacity—Lift 2 Men 4 Lines, Lbs.	Price, Each	Weight
150	9 x 14		10,000	20 000	.....	659
151	9 x 16	4½ to 1	10,000	20 000	.....	676
152	9 x 18	or	10,000	20,000	.....	700
153	9 x 20	18 to 1	10,000	20,000	.....	715
154	9 x 22		10,000	20,000	.....	736



Sasgen Single Drum Double Purchase Winch

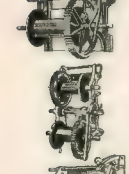
Gears and Frame Made of Best Malleable

No.	Diameter and Length of Drum, Inches	Gear Ratio	Capacity—Lift 2 Men 2 Lines, Lbs.	Capacity—Lift 2 Men 4 Lines, Lbs.	Price, Each	Weight
160	9 x 14		10,000	20,000	.....	426
161	9 x 16	4½ to 1	10,000	20,000	.....	432
162	9 x 18	or	10,000	20,000	.....	440
163	9 x 20	18 to 1	10,000	20,000	.....	452
164	9 x 22		10,000	20,000	.....	462



Sasgen Single Drum Double Purchase Winch

No. Cut Tooth	No. Cast Tooth	Diameter and Length of Drum, Inches	Gear Ratio	Capacity—Lift 2 Men 2 Lines, Lbs.	Capacity—Lift 2 Men 4 Lines, Lbs.	Price, Each	Cut Tooth, Cast Tooth Weight
170	170C	6 x 8	4¾ to 1	20,000	40,000	.....	195
171	171C	6 x 10	or	20,000	40,000	.....	215
172	172C	6 x 12	24 to 1	20,000	40,000	.....	265
173	194C	6 x 15		20,000	40,000	.....	330



Sasgen Double Drum Single Purchase Winch

Gears and Frame Made of Best Malleable

No.	Diameter and Length of Drum, Inches	Gear Ratio	Capacity—Lift 2 Men 2 Lines, Lbs.	Capacity—Lift 2 Men 4 Lines, Lbs.	Price, Each	Weight
140	5 x 14	4½ to 1	3,000	6,000	.....	370
141	5 x 16	4½ to 1	3,000	6,000	.....	390
142	5 x 18	4½ to 1	3,000	6,000	.....	400
143	7 x 14	4½ to 1	3,000	6,000	.....	410
144	7 x 16	4½ to 1	3,000	6,000	.....	420
145	7 x 18	4½ to 1	3,000	6,000	.....	430
146	7 x 20	4½ to 1	3,000	6,000	.....	440
147	7 x 22	4½ to 1	3,000	6,000	.....	453

Sasgen Single Drum Single Purchase Winch

Gears and Frame Made of Best Malleable

No	Diameter and Length of Drum, Inches	Gear Ratio	Capacity—Lift 2 Men 2 Lines, Lbs.	Capacity—Lift 2 Men 4 Lines, Lbs.	Price, Each	Weight
128	5 x 10	4¼ to 1	3,000	6,000	.....	209
129	5 x 12	4¼ to 1	3,000	6,000	.....	210
130	5 x 14	4¼ to 1	3,000	6,000	.....	222
131	5 x 16	4¼ to 1	3,000	6,000	.....	229
132	5 x 18	4¼ to 1	3,000	6,000	.....	235
133	7 x 14	4¼ to 1	3,000	6,000	.....	239
134	7 x 16	4¼ to 1	3,000	6,000	.....	246
135	7 x 18	4¼ to 1	3,000	6,000	.....	253
136	7 x 20	4¼ to 1	3,000	6,000	.....	260

Sasgen Small Double Drum Single Purchase Winch

Gears and Frame Made of Best Malleable

No.	Diameter and Length of Drum, Inches	Gear Ratio	Capacity—Lift 2 Men 2 Lines, Lbs.	Capacity—Lift 2 Men 4 Lines, Lbs.	Price, Each	Weight
112	4 x 8	4 to 1	2,000	4,000	.....	135

Sasgen Small Single Drum Single Purchase Winch

Gears and Frame Made of Best Malleable

No.	Diameter and Length of Drum, Inches	Gear Ratio	Capacity—Lift 2 Men 2 Lines, Lbs.	Capacity—Lift 2 Men 4 Lines, Lbs.	Price, Each	Weight
109	3½ x 6	3½ to 1	1,750	3,500	.....	56
110	4 x 8	4 to 1	3,000	6,000	.....	75

Sasgen Safety Worm Gear Winches

Malleable Cast Worm Wheel and Steel Cast Worm

No.	Diameter and Length of Drum, Inches	Worm Gear Ratio	Capacity—Lift 1 Man 1 Line, Lbs.	Capacity—Lift 1 Man 2 Lines, Lbs.	Price, Each	Weight
0	5½ x 6	16 to 1	350	700	.....	85
1	5½ x 6	20 to 1	750	1,500	.....	90
2	8 x 10	20 to 1	1,000	2,000	.....	85

Sasgen Safety Worm Gear Winches

Worm Gears Machine Cut from Semi-Steel Alloy Blanks
Worm Machine Cut from Steel Bar
Thrust Bearing on Worm Shaft

No.	Diameter and Length of Drum, Inches	Worm Gear Ratio	Capacity—Lift 1 Man 1 Line, Lbs.	Capacity—Lift 1 Man 2 Line, Lbs.	Price, Each	Weight
8	8 x 10	40 to 1	2,000	4,000	.....	102
9	8 x 10	48 to 1	3,000	6,000	.....	137

Double Purchase

10	8 x 10	48 to 1 or 57 to 1	4,000	8,000	.....	140

Sasgen Junior Single Drum Single Purchase Winch

Gears and Frame Made of Best Malleable

No.	Diameter and Length of Drum	Gear Ratio	Capacity—Lift 1 Men 2 Lines	Capacity—Lift 2 Men 4 Lines	Price, Each	Weight
5	4½" x 10"	3½" to 1"	1,500 lbs.	3,000 lbs.	.....	76
6	4½" x 12"	3½" to 1"	1,500 lbs.	3,000 lbs.	.....	80

Sasgen Single Shaft Geared Winch

This Winch Can Be Changed from Direct to Compound in One Second by Operating a Small Lever

No.	Diameter and Length of Drum	Gear Ratio	Capacity—Lift 1 Men 2 Lines	Capacity—Lift 2 Men 4 Lines	Price, Each	Weight
115	4" x 8"	3½" to 1"	1,500 lbs.	3,000 lbs.	.....	71

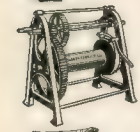
Sasgen Small Winch, Not Geared

Made of Best Malleable

No.	Diameter and Length of Drum	Not Geared	Capacity—Lift 2 Men 1 Line	Capacity—Lift 2 Men 2 Lines	Price, Each	Weight
B	3½" x 7"	.....	750 lbs.	1,500 lbs.	.....	40

Sasgen Small Puller

No.	Diameter and Length of Drum	Not Geared	Capacity—Lift 1 Men 1 Line	Capacity—Lift 1 Men 2 Lines	Price, Each	Weight
60	3" x 6"	.....	300 to 400 lbs.	600 to 800 lbs.	.....	14



Sasgen Double Purchase Hoisting Crab

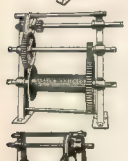
Gears and Frame Made of Best Malleable

No.	Diameter and Length of Drum	Gear Ratio	Capacity—Lift 2 Men 2 Lines	Capacity—Lift 2 Men 4 Lines	Price, Each	Weight
220	7" x 18"		8,000 lbs.	16,000 lbs.	.....	460
221	7" x 18"	6" to 1"	8,000 lbs.	16,000 lbs.	.....	470
225	7" x 20"	or	8,000 lbs.	16,000 lbs.	.....	478
226	7" x 22"	19" to 1"	8,000 lbs.	16,000 lbs.	.....	485
227	7" x 24"		8,000 lbs.	16,000 lbs.	.....	494

Sasgen Single Purchase Hoisting Crab

Gears and Frame Made of Best Malleable

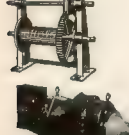
No.	Diameter and Length of Drum	Gear Ratio	Capacity—Lift 2 Men 2 Lines	Capacity—Lift 2 Men 4 Lines	Price, Each	Weight
120	5" x 16"	4¾" to 1"	3,000 lbs.	6,000 lbs.	.....	245
121	5" x 18"	4¾" to 1"	3,000 lbs.	6,000 lbs.	.....	250
122	5" x 20"	4¾" to 1"	3,000 lbs.	6,000 lbs.	.....	255
123	5" x 22"	4¾" to 1"	3,000 lbs.	6,000 lbs.	.....	263
124	7" x 16"	4¾" to 1"	3,000 lbs.	6,000 lbs.	.....	260
125	7" x 18"	4¾" to 1"	3,000 lbs.	6,000 lbs.	.....	269
126	7" x 20"	4¾" to 1"	3,000 lbs.	6,000 lbs.	.....	274
127	7" x 22"	4¾" to 1"	3,000 lbs.	6,000 lbs.	.....	280



Sasgen Double Purchase Truck Winch

Gears and Frame Made of Best Malleable

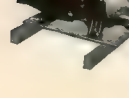
No.	Diameter and Length of Drum	Gear Ratio	Capacity—Lift 2 Men 2 Lines	Capacity—Lift 2 Men 4 Lines	Price, Each	Weight
230	7" x 15"		6,000 lbs.	12,000 lbs.	.....	305
231	7" x 18"	4¾" to 1"	6,000 lbs.	12,000 lbs.	.....	310
233	7" x 20"		6,000 lbs.	12,000 lbs.	.....	315
233	7" x 22"	or	6,000 lbs.	12,000 lbs.	.....	320
234	7" x 26"	13⅛" to 1"	6,000 lbs.	12,000 lbs.	.....	330
235	7" x 30"		6,000 lbs.	12,000 lbs.	.....	340



Sasgen Single Purchase Truck Winch

Gears and Frame Made of Best Malleable

No.	Diameter and Length of Drum	Gear Ratio	Capacity—Lift 2 Men 2 Lines	Capacity—Lift 2 Men 4 Lines	Price, Each	Weight
240	7" x 14"	4¼" to 1"	3,000 lbs.	6,000 lbs.	.....	210
241	7" x 16"	4¼" to 1"	3,000 lbs.	6,000 lbs.	.....	215
242	7" x 18"	4¼" to 1"	3,000 lbs.	6,000 lbs.	.....	220
243	7" x 20"	4¼" to 1"	3,000 lbs.	6,000 lbs.	.....	225
244	7" x 22"	4¼" to 1"	3,000 lbs.	6,000 lbs.	.....	230
245	7" x 24"	4¼" to 1"	3,000 lbs.	6,000 lbs.	.....	235



Sasgen Rooter's Capstan Hoist

This hoist is operated by wrapping the hoisting rope several times around the capstan, depending upon the load to be hoisted. To raise the load the free end of the rope is pulled tight, causing the rope to rerub on the capstan. As the load is raised the operator pulls the free rope toward him. The load can be stopped and held at any point by decreasing the pull on the free end of the rope, so it slips on the capstan. To lower the load the rope is held taut and the free end let out by the operator. Thus the load can be controlled by the operator at all times. The wraps of rope around the capstan act as a positive clutch and brake. This hoist is handy and indispensable for all types of light hoisting.

Maximum capacity 400 pounds with a line speed of 150 feet per minute.

Equipped with a 2 horsepower double geared motor, 3-phase, 60-cycle.

Equipped with a 2 horsepower double geared motor, single phase, 60-cycle, which can be used on electric light current.

61-12-43

The "Salem" Another Well-known "Sherwood Production"

Many of our antiques of Colonial days combine solid Cherry framework with mahogany veneers. Early craftsmen recognized the straight grain and hard texture of cherry not only added DURABILITY, but produced a fine mahogany finish.

Salem represented the finest Early American design and this reproduction is constructed as were the antiques, combining SOLID cherry with fine figured HONDURAS MAHOGANY veneers.

Every detail in this "Salem" group is authentic from the "Boston Poster" bed down to the "Brasses." These solid Brass, antiqued pulls are an exact reproduction of those used on the original Priscilla Alden dressing table—made famous by Longfellow's poem "The Tale of Myles Standish."

The tops of all cases are of solid Honduras Mahogany with authentic thumb nail moulding. Fronts and ends are figured Honduras Mahogany veneers. All exposed framework of solid selected cherry.

Cases are of mortise and tenon construction, fully dust proof and framed in. Drawer backs and sides are quartered sycamore dovetailed and have three-ply mahogany bottoms boxed-in. Large center drawer guides. Hand waxed finish found only on highest quality furniture. Mirrors are genuine plate glass.

Available in this group but not shown are highboys, lowboys, five-drawer vanity, Salem chest, sleigh bed and Tester bed with canopy frame. Shipped from Pennsylvania factory.

Illustrated in lower group.

Dresser. Top 44" x 21" mirror 20" x 28" Three top drawers Weight 185 lbs
24340. **$117.40**

Chest. Top 35" x 21", height 48" Five tiers of drawers with two top drawers Weight 155 lbs
24341 **$96.00**

Boston Poster Bed. Height headposts 58", footposts 49" Note combined panel and stretcher in footboard Weight 85 lbs
24342. Specify full or twin size **$63.30**

Panel Style Bed not illustrated) Weight 70 lbs
24343. Specify twin or full size **$60.70**

Night Table. Top 17" x 14" Two fine drawers Weight 25 lbs
24344. **$39.30**

Illustrated in upper group.
Chest on Chest. Top 36" x 20", height 52" Note beautiful proportions of this chest on chest. Weight 170 lbs
24345. **$125.40**

Vanity. Top 40" x 18"; mirror 16" x 28" Sliding glass make-up shelf in drawer Weight 150 lbs
24346. **$125.40**

Bench. Seat 23" x 14" Weight 15 lbs
24347. **$26.00**

Chair Seat 17½" x 14" Weight 15 lbs
24348. **$28.70**

FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from us which does not prove entirely satisfactory on receipt

SIMEON L. & GEORGE H. ROGERS COMPANY

SILVER PLATE
by ONEIDA LTD. SILVERSMITHS

THOR

The new modern trend in smart design is charmingly interpreted in this dainty creation. It fits readily into the scheme of things and adds lasting beauty to any table setting

JASMINE

A dainty floral design styled in the modern manner and with every delicate detail exquisitely wrought The massed ornamentation is gracefully balanced by the plain surfaces above and below Ideal for engraving

ENCORE

The delicate work of the skilled craftsman the shapely outline and polished planes give it a design truly feminine appeal. In its newness it has not lost the age old appeal which fine silver always has

Spoons

	Doz.
Tea	$ 3.60
Table	7.20
Dessert or Oval Bowl Soup	6.48
Soup (Round Bowl)	6.48
Cream Soup	6.48
Iced Tea	7.20

Forks and Spreaders

	Doz.
Dinner	$ 7.20
Grille	7.20
Salad	7.20
Oyster	7.20
Butter Spreaders	7.20

Knives—Mirror Stainless Blades

	Doz.
Dinner—H H Mirror Stainless Dinner style as illustrated	$12.00
Grille—H H Mirror Stainless Short Blade, Long Handle	12.00

Miscellaneous

	Each
Cold Meat Fork	$ 1.20
Berry Spoon	1.20
Gravy Ladle	1.20
Butter Knife	.60
Sugar Spoon	.60

BE SURE TO SPECIFY PATTERN DESIRED

SIMEON L. & GEORGE H. ROGERS COMPANY

SILVER PLATE

by ONEIDA LTD. SILVERSMITHS

BEVERLY CHEST—NOT ILLUSTRATED

A substantial wood chest that combines the popular walnut finish with a vibrant red dove-tail lining. Trimmed with champagne colored knife loops and white satin pleats in cover. Tarnish-Proof construction approved by Good Housekeeping Institute.

Sets With Hollow Handle Streamline Mirror Knives—Dinner Size

26-PIECE SERVICE FOR 8

6 Teaspoons
6 Dessert or Soup Spoons
6 Forks
8 Knives
1 Butter Knife
1 Sugar Spoon

26-Piece Set in Beverly Chest **$18.20**

34-PIECE SERVICE FOR 8

8 Teaspoons
8 Dessert or Soup Spoons
8 Forks
8 Knives
1 Butter Knife
1 Sugar Spoon

34 Piece Set in Beverly Chest **$23.00**

50-PIECE SERVICE FOR 8

8 Teaspoons
8 Dessert or Soup Spoons
8 Forks
8 Knives
8 Salad Forks
8 Butter Spreaders
1 Butter Knife
1 Sugar Spoon

50-Piece Set in Beverly Chest **$29.60**

50-PIECE SERVICE FOR 12

12 Teaspoons
12 Dessert or Soup Spoons
12 Forks
12 Knives
1 Butter Knife
1 Sugar Spoon

50 Piece Set in Beverly Chest **$32.50**

MAJESTIC DRAWER CHEST

A superb cabinet finished in rich brown mahogany and beautifully trimmed with light coverlid and drawer-pull. The brilliant Castilian Reed lining is strikingly offset with White Pleats in the cover. Silverware blocks are so constructed that extra pieces may easily be added to the set. It holds complete services for 6, 8 or 12.

61-PIECE SERVICE FOR 8

16 Teaspoons
8 Dessert or Soup Spoons
8 Salad Forks
8 Butter Spreaders
8 Forks
8 Knives
2 Tablespoons
1 Butter Knife
1 Sugar Spoon

61 Piece Set in Majestic Chest **$38.70**

77-PIECE SERVICE FOR 12

12 Teaspoons
12 Dessert or Soup Spoons
12 Forks
12 Knives
12 Salad Forks
12 Butter Spreaders
1 Butter Knife
1 Sugar Spoon
1 Cold Meat Fork
1 Berry Spoon
1 Gravy Ladle

77 Piece Set in Majestic Chest..... **$52.00**

84 PIECE SERVICE FOR 8

16 Teaspoons
8 Dessert or Soup Spoons
8 Forks
8 Knives
8 Salad Forks
8 Butter Spreaders
8 Iced Tea Spoons
8 Oyster Forks
8 Cream Soup Spoons
1 Butter Knife
1 Sugar Spoon
1 Cold Meat Fork
1 Gravy Ladle

84 Piece Set in Majestic Chest **$48.50**

92-PIECE SERVICE FOR 12

12 Teaspoons
12 Dessert or Soup Spoons
12 Forks
12 Knives
12 Salad Forks
12 Butter Spreaders
12 Iced Tea Spoons
2 Tablespoons
1 Butter Knife
1 Sugar Spoon
1 Cold Meat Fork
1 Berry Spoon
1 Gravy Ladle

92-Piece Set in Majestic Chest **$56.80**

THOR • JASMINE • ENCORE

Sets Available in All Patterns—Be Sure to Specify Choice When Ordering

Simplex Automatic Raising and Lowering Jacks

No. 22

These Single Acting 5, 7½, 10, 15 and 20-ton Jacks are universally used by contractors, bridge and road builders, truckers, and operators of all types of heavy equipment and machinery for general purpose lifting, skidding, moving, leveling, etc.

The Simplex are the only Jacks that will lift their full capacities on the cap and toe. They are extremely rugged, fast operating and efficient.

The only Gold Medal for the Safety of Jacks was awarded the Simplex by the American Museum of Safety.

Jack No.	Capacity Tons	Height Inches	Lift In.	Min-Ht. Toe Lift	Standard Lever Socket	Weight Lbs.	List Price With Lever
84A	5	14	7	1¾"	2-Way	28	$19.00
85A	7½	17	10	1¾"	2-Way	30	20.00
86A	5	20	13	1¾"	2-Way	35	23.00
185	5	17	10	1¾"	2-Way	33	22.00
*185	(With auxiliary cap shoe)			1¾"	2-Way	36	23.00
*85S	7½	17	9⅛	3½"	2-Way	42	31.00
1017	10	17	9⅛	3½"	2-Way	40	28.00
22	10	21½	12½	2½"	2-Way	58	32.00
†24A	15	23⅜	13	2½"	Oval †	90	50.00
129	15	28¾	19	2½"	Oval †	96	52.00
249	15	35	24½	2½"	Round	114	60.00
12029	20	28½	18	2½"	Oval †	104	58.00

*The drop forged auxiliary cap shoe is adjustable, providing 5 additional lifting points and makes it possible to lift on the right side of the Jack or at a right angle to the operator.

**Electrided and has a large adjustable toe lift that is an integral part of the Jack and provides 3 extra lifting points.

†Large round, small round (single or 2-way) or square lever sockets.

Oval hickory lever poles are stronger because they cannot be inserted across the grain. Large round lever sockets are for round hickory lever poles. All steel levers are heat-treated and chisel-pointed.

Simplex Geared Jacks

Single Acting—Automatic Raising and Lowering

No. 127

Built for car, paver, trencher and power repairs, heavy construction, rigging and structural work. Power, safety and ruggedness have made these Simplex Jacks famous for heavy lifting.

Nos 126 and 127 are built with broad right and left-hand toe lifts, respectively, and are generally used in pairs. Nos. 125 and 135 lift only on the cap.

Furnished with oval sockets and 6 ft oval hickory poles, which are the strongest type of lever poles.

Jack No.	Cap. Tons	Height Inches	Lift Inches	Min. Ht. Toe Lift	Weight Pounds	List Price
125	25	26½	15½	3"	168	$132.00
126	25	27⅜	12½	3"	192	145.00
127	25	27⅜	12½	3"	192	145.00
135	35	27	16	3"	228	176.00

Simplex Emergency Jacks

Single Acting—Automatic Raising and Lowering—5 and 15-Ton Capacities.

No. 310A

The No. 310A is the original upright and tilting jack. Ideal for lifting and lowering, pushing and pulling. For rigging, bridge work, pulling casing, pushing culverts, repairing power shovels, shoving and skidding, pulling and straightening telephone and power poles, etc.

Lifts on the cap, two positions of the auxiliary shoe,* the corrugated toe lift and at any intermediate point by using the chain as a sling. The most versatile general purpose jack on the market.

The double lever socket facilitates work in cramped quarters and angular lifting

Jack No.	Capacity Tons	Height Inches	† Lift Inches	Weight of Jack Pounds	Weight Complete	List Price Complete
522	5	22	14⅜	42	64	$35.00
310A	15	22	14	74	109	62.00

All have foot operated base locking hook.

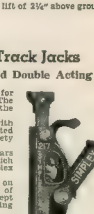
Complete with chain, auxiliary cap shoe and lever.

*No. 522—1 position.

†Both jacks have minimum height toe lift of 2¼" above ground.

Simplex Electrided Track Jacks

Tripping Type—Single and Double Acting



No. 217

Fifteen-ton tripping types—designed for track maintenance and construction. The manually operated safety trip—controls the tripping of the load.

All Simplex Track Jacks are built with high carbon and alloy steel heat-treated working parts, large base areas, and safety lugs underneath the caps.

The jack housing where the toe-lift bears is hardened by "Electriding," which greatly reduces wear—an exclusive Simplex feature.

Nos 101-106 Double Acting—Operate on both the upward and downward stroke of the lever bar. They are identical except for height and lift. The easiest lifting track jacks available.

Nos 215, 216, 217 and 218 are Single Acting and are identical except for height and lift. Built with a rust-proof tension spring located squarely in back of both the lifting and retaining pawls which insures safe lifting at any angle.

The No. 215 is the most modern type of track jack and is used effectively for both track *surfacing* and track *lining*.

The toe lift of the double acting No. 304 is on the right side of the housing rather than opposite the lever socket.

Maximum manpower is developed by specifying square lever sockets and using steel lining bars. (Lining bar prices furnished on request.) When oval or round sockets with oval or round hickory poles are desired, add $1.00 to list.

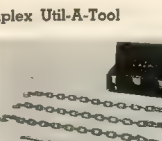
Jack No.	Cap. Tons	Height Inches	Lift Inches	Min. Ht. Toe Lift	Weight Pounds	List Price
215	15	10⅛	5	2½"	40	$25.00
216	15	17⅛	9	2½"	54	28.00
217	15	22⅝	13	2½"	60	28.00
218	15	29	19¾	2½"	76	36.00
101	15	22⅝	13	2¾"	60	28.00
106	15	29	18	2¾"	80	36.00
304T	15	22⅝	13⅛	2¾"	62	32.00

Write for Catalog 43 for complete information on Simplex Jacks, including cable reel, pole pulling and straightening, pipe pulling and pushing and other Jacks not shown here.

Simplex Util-A-Tool

It saves and saves and saves, on countless maintenance, repair and production jobs. An asset to any shop, a necessity in the field

It *pushes* objects apart on the drop forged and corrugated nut ends, or on pipes inserted in nut wells or on the *spreading* lugs.



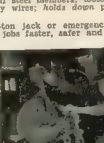
It *pulls* together, using chains with the sky hooks, which are inserted in the nut holes, or on *clamping* lugs.

It *lifts* when the triangular snap-on base is attached. *Pulls* spoked or solid center *wheels and gears* by attaching the 3-way chain base, centering the live center in the shaft after removing the nut and connecting the 3 chains with the base and object to be pulled. (See illustration below.)

It *clamps* parts for welding or assembly; *straightens* bent objects; *bends* pipe and structural steel members; *loosens* and pulls frozen objects; *tensions* guy wires; *holds down* portable machines.

Can be used as a regular 10-ton jack or emergency hoist and performs hundreds of other jobs faster, safer and easier. Util-A-Tools are sold on a "pay for themselves basis."

Util - A - Tool Maintenance Set consists of a Simplex push-pull jack, two drop-forged chrome-nickel steel sky hooks, drop-forged 3-way base which is also a wheel puller and a No 3A Spreader Jack. Included also are three 5' x 40' chains with forged steel grab hooks and claws, forged chisel pointed liner bar ⅞" round and 18" long, and enameled steel tool box, with lock and key, 19"x7"x7¼". Use 1" pipe in base, or ¾" pipe in cap of No 3A Jack, for wider spreads



Simplex stud links are optional equipment and list at $1.00 each.

Write for information on the 614A Body and Frame Kit.

SPECIFICATIONS

Jack No.	Length Screw Inches	Screw Travel Inches	Weight Each Lbs.	Price Jack Only	Price Complete Maintenance Sets
610	10	4½	11	$18.00	$46.30
612	12	6½	12	15.50	46.80
614	14	8½	13	16.00	47.30
616	16	10½	14	16.50	47.80
618	18	12½	15	17.00	48.30

Util-A-Tool with No. 610 weighs 74 lbs. complete.
Add ½ lb. for each size larger (with 612, 74½ lbs., etc.)

Simplex Industrial Hydraulic Jacks

Simplex Hydraulic Jacks are made for all heavy-duty construction jobs, each unit being factory-tested to 50% over-rated capacity. They are well balanced, can be used in horizontal or vertical positions, ruggedly constructed and feature minimum closed height and maximum lift. Precision tested malleable iron top nut and base, neoprene pressure packing, drop forged steel caps that cannot come loose, leakproof operation and convenient carrying handle are added features. Made in five capacities.

Model No.	Rated Capacity Tons	Low Height Inches	Hyd. Lift Inches	Exten. Screw Inches	Total Height Inches	*Net Wgt. Lbs. Ea.	List Price Each
3HJ	3	9	6½	2	17½	15	$10.45
5HJ	5	9	6½	3	18½	16	13.70
8HJ	8	9	6½	4½	19½	21½	17.85
12HJ	12	9	6½	8	18½	29½	29.25
20HJ	20	10	6 5/16		16⅛	38½	42.75

• Net weight includes ¾" handle, 20" long, (weight 1¼ lbs.)

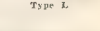
Use only Simplex Hydraulic Jack Oil. Higher viscosity, lower freezing point.

Simplex Steamboat Ratchet Pulling Jacks

Type H

Type L

For construction and engineering companies, bridge builders, shipyards. Save time and cut costs on coffer dams, concrete and steel construction requiring fake-work or framing. Extensively used as a hitching tow on boats, barges and floats; as a guy hold-down for masts and derricks; to tie piling and beats together and for wharf and bridge construction and maintenance. Also used to bind loads of pipe, steel, timbers, etc., on trucks, trailers and flatcars. All types constructed with spring operated plunger which firmly engages pawl or dog with ratchet wheel, insuring safety at all times. By reversing the pawl, cable, rope or chains attached to the hooks or eyes are slackened.



Types E and S

Type H is equipped with hooks at each end. Type L has lock-link hook-ends. Type E is equipped with eyes at each end. Type S is equipped with drilled sleeve ends.

Jack No.	Capacity Tons	Diam. of Screw Inches	Length of Barrel Inches	Closed Length Inches	Travel Inches	Weight Lbs.	List Price
L1	8	1¼	18	40	14	42	$ 14.00
L2	8	1¼	24	46	20	44	15.00
L3	8	1¼	30	52	26	47	16.00
L4	8	1½	36	58	32	50	19.00
L5	15	1¼	24	52	20	70	22.00
L6	15	1¼	30	64	26	75	34.00
L7	15	1½	36	70	32	80	38.00
L8	15	1½	48	82	44	90	42.00
H1	7	1¼	18	42	14	42	14.00
H2	7	1¼	24	48	20	45	15.00
H3	7	1½	30	54	26	50	16.00
H4	7	1½	36	60	32	55	19.00
H5	15	1½	24	54	20	72	32.00
H6	15	1½	30	60	26	80	34.00
H7	15	1½	36	66	32	85	36.00
H8	15	1¾	48	78	44	95	42.00
E or S1	20	2	18	34	14	58	32.00
E or S2	20	2	24	40	20	64	34.00
E or S3	20	2	30	46	26	72	36.00
E or S4	20	2	42	58	38	87	42.00
E or S5	25	2½	24	39	20	92	46.00
E or S6	25	2½	30	45	26	100	43.00
E or S7	25	2½	36	51	32	113	48.00
F or S8	25	2½	42	64	38	123	49.00

Write for Catalog 43 for complete information on Simplex Jacks, including cable reel, pole pulling and straightening, pipe pulling and pushing and other jacks not shown here.

SODA KING AND SPARKLET SYPHON BOTTLES

ICE BUCKET AND TONGS—A handy container for the ice cubes when serving cold drinks. Capacity, 1¾ qts. large enough for forty 1-inch ice cubes. Made of brightly polished solid copper. Bail handle and Ice Tongs are of solid brass.
16510. **$2.10**

Golfer's Ash Tray. Four miniature golf clubs (supporting three golf balls) act as the cigarette rests in this ash tray. It will appeal to all golfers. For cleaning the ash tray the clubs are easily removed by loosening a holding screw on the bottom that can be turned with a dime. Polished chromium finish. Size diameter 4 inches, 1 inch deep.
16513. **$1.80**

SODA KING—A sensationally new and improved syphon. Takes ice cubes . . . makes ready-iced Club Soda that has more sparkle and pep. Operates in a new way . . . just a push on the button punctures the Super-Charger and charges the syphon. Full quart capacity . . . weighs only 2 lbs. Fits any refrigerator. Smart and modern in appearance . . . beautifully finished in chromium with black, ivory, red or blue top. A gift that will please anyone who enjoys a tall drink.
16518. Complete with 3 Super Chargers **$8.40**

SODA KING SUPER-CHARGERS

Each makes a full quart of Club Soda packed with sparkle and pep. Sterilized before being filled. Guaranteed fully charged. Fits all types of syphons—both glass and metal.

16522. Box of 10 ..... **$1.00**
16523. Box of 24 ..... 2.40

THERMO-SERV—A marvelous new insulated serving dish for serving foods hot or cold. Keeps ice cubes 6 to 8 hours. Will keep foods warm for 1 to 2 hours. Dishes are more appetizing, attractive and flavorful when served at proper temperature. Wonderful for dinners, luncheons, parties, picnics, etc. Attractive Penguin embossing. Wooden side handles and cover knob. White enamel lined steel inset holds 2 quarts.
16511. Polished Copper **$5.70**

Soda King Bar Set. An all-metal Soda King Syphon specially finished from top to bottom in glistening chromium plate, combined with chromium tray bar spoon and jigger. Strikingly beautiful in appearance but also very practical and useful. An ideal gift for the man who likes to serve his high balls or Tom Collins in style.
16515. Set complete **$14.00**

This beautiful new Soda King syphon has an all metal bottle and plastic head. Full quart capacity. Exceptionally easy to charge and to handle. The charge holder makes a convenient handle for carrying syphon. Can be held and operated with one hand. Fits the smallest refrigerator. Finished in glistening chromium with black top. Height 9¾ inches. Weight only 2 lbs.
16517. Complete with 3 Super-Chargers **$8.40**

METAL GIFT ITEMS

Tidy Crumber. In designing this crumber, we feel we have achieved beauty and distinctiveness of design without sacrificing utility. In fact the broad long bristled brush and the beveled edge tray, with its broadening shoulders, are a most efficient design for practical purposes. Polished chrome finish. Size tray 8 inches long, brush 5½ inches long.
16512. **$3.00**

Silent Butler. The Silent Butler is a smart new server for candy, nuts or mints. It has a hinged cover that is easily opened by a thumb lever, as it is, in fact, a covered one hand server. It may also be used for collecting ashes from individual ash trays at a bridge or tea. Polished chromium finish with white plastic handle. Size 4¾ inches long overall, 3⅛ inches wide.
16514. **$4.50**

Sparklet Syphon. A genuine Sparklet Syphon with every luxury feature. Finished in highly polished heavy chromium plate, it adds beauty and distinction to any home. Pure tin lined to resist corrosive action. Wide mouth to accommodate ice cubes and facilitate cleaning. Charges through the bottom, eliminating unattractive exposed charging mechanism. A syphon reminiscent in design of the famous Sparklet heritage but as modern as tomorrow in beauty and operation.
16518. Chrome Plated Vase, Red Head **$8.40**
16519. Chrome Plated Vase, Black Head 8.40
Each Syphon comes packed complete with 3 bulbs.

SPARKLET RED BAND BULBS

16520. Package of 10 **$1.00**
16521. Package of 25 2.50

TOY SALES AND PROFITS THE YEAR 'ROUND

12-In. Baby Dolls in 2 Styles

Ⓒ Good quality full composition. Jointed arms and legs sculptured by rounded, tastefully painted baby features and modeled hair. Assid. 2 styles one with lawn dress and bonnet, other in sleeping blanket. **60-3643**—1 doz in box. ..... **Doz 4.95**

14-In. With Dotted Swiss Frock

Ⓓ Full composition doll. Jointed arms and legs. Painted features and hair. Charming hat and bonnet of dotted Swiss in assid. colors. Lace-lavish trim. Pretty undies, socks and shoes. **60-3660**—1 doz in box, 21 lbs. ..... **Doz 5.90**

14-In. Doll with Dainty Dress

Ⓐ Full composition with jointed arms and legs. Captivating painted features and molded hair. Assid. colored lawn frock with matching ruffled panties and collar. Undies, socks, shoes. **60-3644**—2 doz in box, 22 lbs. ..... **Doz 5.10**

14-In. Soft Stuffed Baby Dolls

Ⓑ Composition arms and legs. Soft stuffed body. Exquisite lawn dress and matching bonnet with contrasting trim. Socks with ribbon bows. Alive with charm! **60-3654**—1 doz in box, 16 lbs. ..... **Doz 6.50**

Patriotic Dolls in 3 Styles

Ⓒ They stand, tremendously popular! Bleacher tall. Full composition character dolls with stand-up legs. Paint ed features and skillfully molded hair. Assid. 3 styles and colors. Undies, socks, shoes. **60-3663**—1 doz in box ..... **Doz 6.50**

Dolls in Uniform

with Mischievous Googoo Eyes

Brand New Patriotic Assortment in 3 Favorite Styles

- Large Soft Cotton Stuffed Bodies with Balloon-Type Legs
- Separate Googoo Eyes That Roll from Side to Side
- Each is 15 Inches Tall. Sailor, Sailor and Nurse

$7.50 Doz

2 sailor dolls wear blue and white middy balloon type legs enable them to stand alone. Complete outfit includes middy blouse, bell bottom trousers, cap, neckerchief and jaunty shoes. Nurse in khaki cotton with cap, black felt tie and brown satchelette belt and collar. Nurse in blue cotton with white cap, collar and leatherette belt. Nurse in white with white cape, white cap and apron.

60-3903—1 doz in box, 14 lbs. ..... **Doz 7.50**

22-In. Extra Tall Dolls

Composition head, arms and legs. Stuffed body. Pretty painted features and real silky molded hair. Flowered percale frock in assid. colors with solid color yoke and ruffle. Braid trimmed collar. Complete with panties, socks and shoes. **60-3733**—3 doz in box, 58 lbs. ..... **Doz 10.80**

22-In.—Exquisitely Dressed!

Composition head, arms and legs. Stuffed body. Adorable painted baby features and molded hair. Lovely lawn frock and hat in assid. pastel colors. Lace trimmed ruffled cuffs and bonnet ruffle accentuate color. Undies, socks and ribbon ties. A beauty **60-3784**—1 doz in box, 38 lbs. ..... **Doz 12.35**

18-In. Stuffed Jumbo Dolls

Soft cotton-stuffed bodies with balloon type legs. Stands Alone. Flowered percale frock and large bow in assorted color test. Are Kindly Wash. Hair dressed with ribbon and bow feature. Baby hair bright red cheeks and rosebud mouth. **60-3590**—1 doz in box, 35 lbs. ..... **Doz 12.50**

6-Style Play Frocks

Adorable frocks for dolls. Assid. color checks and plaids and prints. Some lace trimmed, others with binding and piping. Made to fit 12 to 13 in. dolls. Each crisp style with hanger. **60-4701**—2 doz in box. ..... **Doz 78c**

12-Style Dresses

Play and party dresses, pink, blue and maize. Lace trimmed, tailored and ruffled. Organdie, dimity, batiste, crepe, satin. Elaborately garnished. Made to fit 12 to 13 in. dolls. Each with hanger **60-4705**—2 doz in box ..... **Doz 1.15**

12-Style Doll Frocks

Captivating play and party dresses. Many styles to pick from. Lace trimmed, tailored, ruffled, etc. Fancy ribbon and sash bows. Made to fit 12 to 13 in. dolls. Each with hanger. **60-4735**—1 doz in box ..... **Doz 2.10**

Doll Stockings

White rayon, pink or blue lisle. For 12 to 13 in. dolls. Pair on card **60-4715**—2 doz pr in box **Doz pr 80c**

White Doll Shoes

Simulated leather, board heels. For 12 to 13 in. dolls. Pair on card **60-4714**—2 doz pr in box **Doz pr 80c**

Layette Assortments

Fits dolls from 10 to 13 in. Assid. slips, petticoats, 3 pairs of doll socks, 3 pairs of white shoes and 3 diapers. Some are wrapped in cellophane. Baby doll clothes are important sales producers. Order this assortment now **60-4704**—1 doz in box **Doz 78c**

Layette on Cards

Fine doll items 14 to 18 in. Assid. pretty layette. Each and everything various combinations of pinafores, slips, dresses, underwear, socks, etc. This assortment will thrill any young mother ... everything to take care of baby dolls **60-4703**—1 doz in box ..... **Doz 1.20**

TOYS TO DELIGHT LITTLE HOUSEKEEPERS

Earthenware Churn

Ally to churn simple and tasty treats! Earthenware with blue lines. Wood dasher handle and dasher. Hole in lid for twirling dasher. Girls like to pretend they're making butter. Feature now.

62-84572—2 doz in crate. 22 lbs. **Doz 2.25**

Wood Clothes Pins—2 Styles

2¾-in. long made of smoothly finished hardwood with spinners. Every little housedress requires clothes pins to do a complete job. Order your needs from Butlers now.

Ⓐ Square shape. 50 tumbled clothes pins on card.

62-4556—1 doz cds in pkg. ..... **Doz cds 81c**

Ⓑ Round shape. 24 clothes pins in open face box

62-4555—1 doz boxes in ctn **Doz boxes 82c**

Good Grade Toy Brooms

32 inch, good grade broom corn. Serrated wire bound neck and colored handles. Little housekeepers like to sweep and this inexpensive broom is another appreciate. Buy all your housekeeping toys from Butlers now ... save time, money and effort!

62-84596—1 doz in bdl., 6 lbs. ..... **Sold out**

Better Toy Brooms

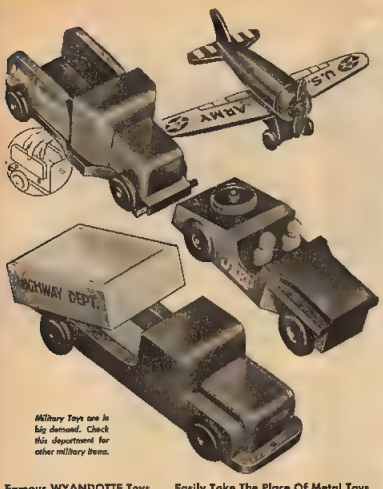
32 inch fine grade broom corn. Serrated spiral wire neck and colored handles. Better finished handles and wire neck than broom shown at left. Toy brooms are a "must-have" for small housekeepers ... give this better quality broom a prominent display

62-84598—1 doz in bdl., 8 lbs. ..... **Sold out**

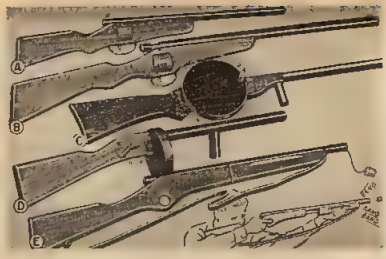
Wooden Doll Furniture in Maple Finish

4½-in. over-all, 4 styles. Well built table chairs, settees rock easy chairs, sofa and dresser. Maple finish. Fine items for doll room combinations

60-9076—2 doz in box ..... **Doz 80c**



Military Toys are in big demand. Check this department for other military items.



These WOOD Guns Answer The Demand For Price . . Action . . Variety

Ⓐ Wyandotte Rifles

$2.29 Doz.

22 in. long, black enameled barrel, natural finish stock, metal trigger and sighting device. A realistic rifle made entirely of wood. Black in box.

65-10—(Mfrs. 431) ½ doz min. ship. . . . Doz 2.39

Ⓑ Wyandotte Rifles

$4.00 Doz.

31½ in. long, the same color and style as the gun shown at left except an additional slide action loading feature which resembles a real gun.

65-20—(Mfrs. 441) ½ doz min. ship. . . . Doz 4.00

Ⓒ Noisy "Tom-E-Gun"

$4.89 Doz.

21 inches long, black enameled barrel, receiver and grenades and deer and side breakage bar red, brown stained stock, red trim. Makes "Rat-tat-tat" noise.

62-85—½ doz in box . . . . . Doz 4.89

Ⓓ Daisy "Chattermatic" Sub-Machine Guns

$7.10 Doz.

23½ inches long, black barrel and cylindrical magazine, natural finish stock with "Victory Knob" crest, crank operated makes extra loud "Rat tat-tat" noise. A Daisy made gun of hard wood assures you of high quality.

62-886—(Mfrs. 83) 1 doz in carton, 15 lbs. . . . . Doz 7.10

Ⓔ Daisy "Commando" Action Pop Guns

$9.50 Doz.

29 inches long, black barrel, red fore-arm, natural finish stock with "Victory Knob" crest, gray webbed sling, pump action like regular gun, cork on string makes loud report when pump action is operated

62-25—(Mfrs. 86) ½ doz in lithographed box . . . . Doz 9.50

Famous WYANDOTTE Toys . . . Easily Take The Place Of Metal Toys

Timely Colorful „ wood and heavy cardboard toys brought out to take the place of "hard-to-get" metal toys. They're well made handsomely finished and are splendid reproductions of the currently popular war machines. Include them on your mail order

Airplanes . . . Wood and Cardboard

$2.25 Doz.

A inches long, 10½ inch wing span, sturdy motor style army pursuit plane redwood fuselage, heavy cardboard wings and tail Colorful lettering and army insignia

62-4390—(Mfrs. 214) ½ doz in carton, min. shipment . . . . Doz 2.35

Army Jeeps . . . Removable Figures

$4.85 Doz.

9 in. long, 3⅝ inches high, 3⅛ in. wide made entirely of wood, bright enameled finish in two colors. Two wooden figures in drivers seat are removable. Good value

62-4396—(Mfrs 303). ½ doz minimum shipment . . . . Doz 4.85

Army Supply Trucks . . . Removable Sides

$4.85 Doz.

9⅛ inches long, 3⅝ inches high, 2⅝ in. wide, made entirely of wood, bright cream enamel finish in two colors. Removable sides.

62-4395—(Mfrs. 307) ½ doz minimum shipment . . . . . Doz 4.85

Highway Dump Trucks . . Large Size

$7.80 Doz.

11½ in. long 4¼ in. high 1⅞ in. wide made entirely of wood bright enameled finish in two colors. Made extra durable

62-4399—(Mfrs 1030) ½ doz in box . . . . . Doz 7.80

Wonderful Line of WOOD Action Pull Toys . . . Highly Colored

"George The Grasshopper"

12 inches long, 8 inches high, shows crank finish decoration to the side screen process which makes them unusually appealing. The Model-like action is a big selling feature.

62-6381—½ doz in box. . . . Doz 7.71

"Tim The Turtle"

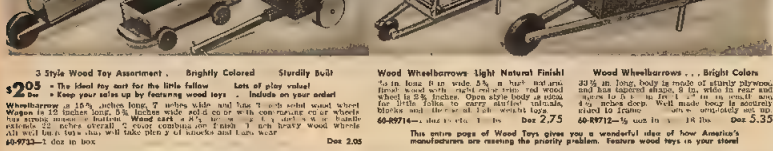
14 inches long 8½ inches wide, extra large size toy with slow action. Body and head glossy enamel finish, decorated by silk screen process. A toy that aptly takes the place of metal.

62-6390—½ doz in box . . . . Doz 7.77

Popular Army Tanks

11½ inches long, 6 inches high, army olive drab paint and red yellow detail, revolving turret makes "Rat-tat-tat" noise and wobbles from side to side when toy is pulled

62-6384—½ doz in box. . . . . Doz 8.00



3 Style Wood Toy Assortment . Brightly Colored Sturdily Built

$2.05 Doz.

- The ideal toy cart for the little fellow Lots of play value!
- Keep your sales up by featuring wood toys . Include on your order!

Wheelbarrow is 15½ inches long, 7 inches wide and has 3 inch solid wood wheel **Wagon** is 12 inches long, 5⅜ inches wide solid color with contrasting color wheels has strong massive bottom. **Wood cart** is 8½ inches long, 4½ inches wide, handle extends 22 inches overall. 3 color combination finish. All well built toys that will take plenty of knocks and hard wear

60-9733—1 doz in box Doz 2.05

Wood Wheelbarrows Light Natural Finish!

9⅛ in. long, 8 in wide, 5⅜ in. high. Hot stamped wood with bright red trim. Red wood wheel is 5⅜ inches. Open style body is ideal for little folks to carry stuffed animals, blocks and other small play material toys

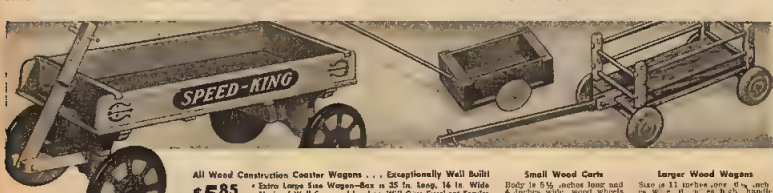
60-R9714—1 doz in ctn. 11 lbs. Doz 2.75

Wood Wheelbarrows . . . Bright Colors

33½ in. long, body is made of sturdy plywood, and has tapered shape, 9 in. wide in rear and tapers to 5 in. in front. Has small box 4½ inches deep. Well made body is securely glued to frame with completely assembled

60-R9712—½ doz in ctn. 18 lbs. Doz 5.35

This entire page of Wood Toys gives you a wonderful idea of how America's manufacturers are meeting the priority problem. Feature wood toys in your store!



All Wood Construction Coaster Wagons . . . Exceptionally Well Built!

$5.85 Each

- Extra Large Size Wagon—Box is 35 In. long, 16 In. Wide
- Made of Well Seasoned Lumber—Will Give Excellent Service
- Attractive Finish—Varnished Natural Finish With Red Trim

Box has 3 cleats under bottom, long wood handle, gear is made of 1⅛ in. hard lumber with steel bushings gear bearing part of wooden axle 6½ inch wheels are all wood with oil impregnated wood bushings

60-R450—1 in carton, 37 lbs Each 5.85

Small Wood Carts

Body is 5¼ inches long and 4 inches wide, wood wheels are 3½ inches in diameter 12 inch wood handle. Blue red painted body with natural color wheels, handle.

60-R9730—2 doz in ctn. 7 lbs . . . Doz 90c

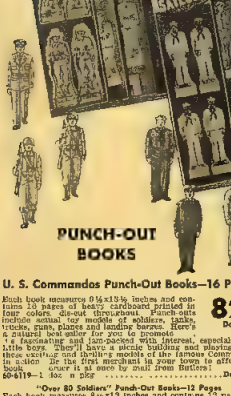
Larger Wood Wagons

Size is 11 inches long 6½ inches wide, 4½ inches high, handle is 9 inches long. Fancy wood wheels are 5 inches in diameter. Blue color. Has natural finish trim with brakes color decorated.

60-R9734—1 doz in ctn., 12 lbs . . . Doz 2.75

New Items

Keep Mrs. Customer Coming Into Your Store For All New and Timely Items!



PUNCH-OUT BOOKS

U. S. Commandos Punch-Out Books—16 Pages

Each book measures 9¼x11¼ inches and contains 16 pages of heavy cardboard printed in four colors die-cut throughout. Punch-outs include actual top models of soldiers, tanks, trucks, guns, planes and landing barges. Here's a natural best seller for you to promote. It's fascinating and jam-packed with interest, especially for little boys. They'll have a whale of a time building and playing with these exciting and thrilling models of the famous Commandos in action. Be the first merchant in your town to offer this book. Order it at once by mail from Butlers!

82¢ Dozen

60-6119—1 doz in pkg . . . . . **Doz 82c**

"Over 80 Soldiers" Punch-Out Books—12 Pages

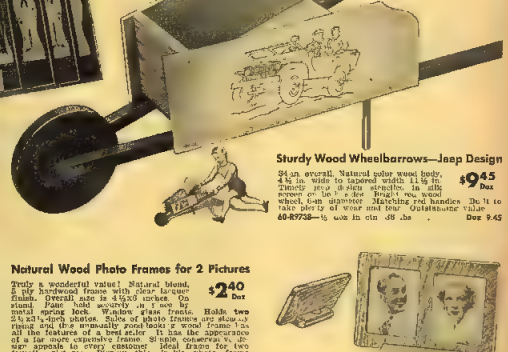
Each book measures 8¾x13 inches and contains 12 pages of heavy cardboard die-cut and stand-up soldiers. More than 80 soldiers, each 4 inches high. Every uniform represented.

60-6126—1 doz in pkg . . . . . **Doz 78c**

"Over 80 Sailors" Punch-Out Books—12 Pages

8¾x13 in book, 12 pages of heavy cardboard die-cut and stand-up sailors. More than 80 sailors 3-in high. All uniforms

60-6138 1 doz in pkg . . . . . **Doz 78c**



Sturdy Wood Wheelbarrows—Jeep Design

24 in overall. Natural color wood body, 4½ in wide to tapered width 11⅝ in. Tinned jeep chassis complete, in silk screen on body. Bright red wood wheel, 6-in diameter. Matching red handles. Built to take plenty of wear and tear. Outstanding value.

$9.45 Doz

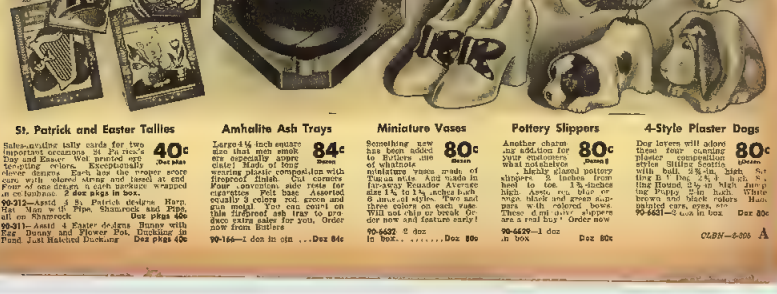
60-R9738—½ doz in ctn . . . . . **Doz 9.45**

Natural Wood Photo Frames for 2 Pictures

Truly a wonderful value! Natural blond, 5 ply hardwood frame with clear lacquer finish. Overall size is 4½x9 inches. On stand. Fine hold security as it is set by metal spring lock. Window glass fronts. Holds two 2½x3½-inch photos. Sides of photo frames are slightly rising and the unusually good looking wood frame has all the features of a best seller. It has the appearance of a far more expensive frame. Simple conservative design appeals to every customer. Ideal frame for two favorite pictures. Display this double photo frame prominently and you'll find it sells itself.

$2.40 Doz

90-5025—½ doz in pkg . . . . . **Doz 2.40**



St. Patrick and Easter Tallies

Sales-exciting tally cards for two important occasions. St. Patrick's Day and Easter. Wet proofed with eye-getting colors. Exceptionally clever designs. Each has the proper score card, with colored string and tassel at end. Four of one design, a card package wrapped on cellophane. **2 doz pkgs in box.**

40¢ Doz pkgs

90-312—Assid 3 St. Patrick designs: Harp, Hat, Mug with Pipe, Shamrock and Pipe, all on Shamrock . . . . . **Doz pkgs 40c**

90-311—Assid 4 Easter designs: Bunny with Egg, Bunny and Flower Pot, Duckling in Hat, Just Hatched Duckling . . . . . **Doz pkgs 40c**

Amhalite Ash Trays

Large 4¼ inch square size that men smokers especially appreciate! Made of long wearing plastic composition with fireproof finish. Cut corners. Four convenient side rests for cigarettes. Felt base. Assorted equally 2 colors, red, green and gun metal. You can count on this fireproof ash tray to produce extra sales for you. Order now from Butlers.

84¢ Dozen

90-166—1 doz in ctn . . . **Doz 84c**

Miniature Vases

Something new has been added to Butlers' line of wholesale miniature vases made of Tuscan satin. And made in fan-away Brandeis Avenues size 1¾ to 2¼ inches high. A miniature of styles. Two and three colors on each vase. With not chip or break. Order now and feature early!

80¢ Dozen

90-6627—2 doz in box . . . . . **Doz 80c**

Pottery Slippers

Another charming addition for your customers what notabiece . . . Highly glazed pottery slippers. 2 inches from heel to toe. 1¾ inches high. Assorted blue or beige with brown and green sugars with colored bows. These dainty slippers are a real buy! Order now

80¢ Dozen Pairs

90-6629—1 doz in box . . . . . **Doz 80c**

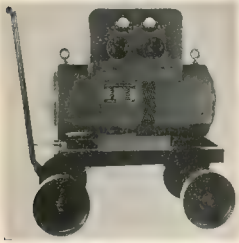
4-Style Plaster Dogs

Dog lovers will adore these four charming plaster composition styles. Sitting Scottie with ball, 2¾ in. high. Sitting Boston Bull, 2¾ in. high. Sitting Hound, 2¾ in. high. Jumping Puppy, 2 in. high. White, brown and black colors. Hand painted eyes, eyes, etc.

80¢ Dozen

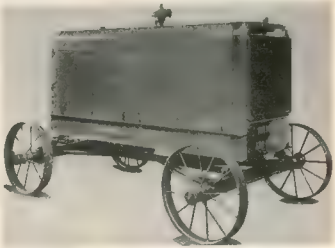
90-6631—2 doz in box . . . **Doz 80c**

UNIVERSAL WELDING MACHINES



ARC WELDERS (Direct Current Arc)

Stationary and portable type direct current arc welders are available with 220/440 volt, 60 cycle, three-phase, driving motors in standard N.E.M.A. 40 volt, in ratings 200 ampere, 300 ampere, and 400 amperes. Also available with direct current motors, 230 volts.



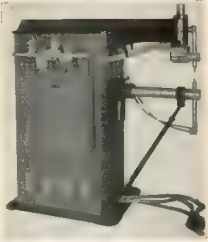
ARC WELDERS (Direct Current Arc)

Stationary and portable steel wheel mounted or with pneumatic or solid rubber tires with and without springs, totally enclosed with lifting type hinged doors. Ratings available, 200 ampere, 300 ampere, and 400 ampere. Standard engines, Hercules, Chrysler or Continental as available. All units include a 2 KW. A.C. auxiliary current supply for small tools and lighting

ARC WELDERS

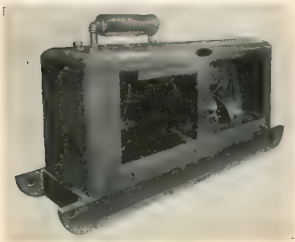
(Alternating Current Arc)

Types are available with 80 volts open circuit 40 volt arc in ratings 200, 300, 400, 500, 750 and 1000 ampere. Stationary or with shop type wheels. Current control by screw adjusting handle in infinite steps to 25 per cent over nominal rating. Power supply 220 or 440 volt, 60 cycles.



SPOT WELDERS

Alternating current types for 220 or 440 volts, 60 cycles for steel and stainless, from two thicknesses, 20 gauge to two pieces. Capacities, 2½ to 10 KVA in bench models 2½ to 200 KVA in floor mounted models. Foot pedal air, or motor operated-in rocker arm or press type. Arms of any reasonable length, that are reversible for vertical or 20° slant electrode holder mounting



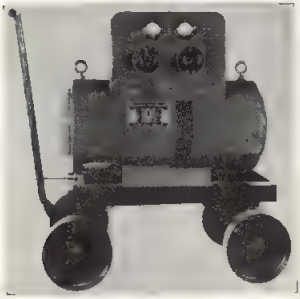
WELDING MANIPULATORS

Three and five ton capacity rotating and positioning work 360 degrees at all working angles.

GENERATOR SETS

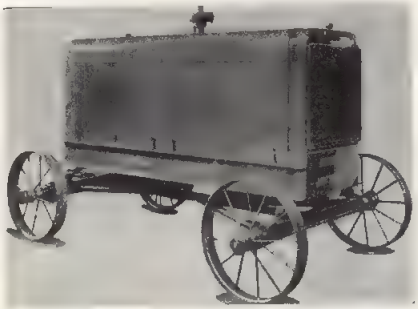
For alternating current generation, 110 or 220 or 440 volts, 60 cycles, three phase or single phase, or 125 or 250 volts direct current, driven by Diesel or gasoline engines from 1 KW. to 150 KVA.

UNIVERSAL WELDING MACHINES



ARC WELDERS (Direct Current Arc)

Stationary and portable type direct current arc welders are available with 220/440 volt, 60 cycle, three-phase, driving motors in standard N.E.M.A. 40 volt in ratings 200 ampere, 300 ampere and 400 amperes. Also available with direct current motors, 230 volts.



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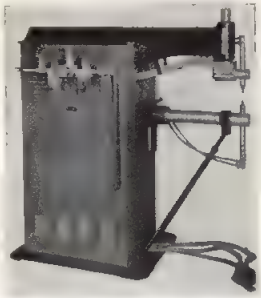
Stationary and portable steel wheel mounted or with pneumatic or solid rubber tires with and without springs, totally enclosed with lifting type hinged doors. Ratings available, 200 ampere, 300 ampere, and 400 ampere. Standard engines, Hercules, Chrysler or Continental as available. All units include a 2 KW. A.C. auxiliary current supply for small tools and lighting

ARC WELDERS

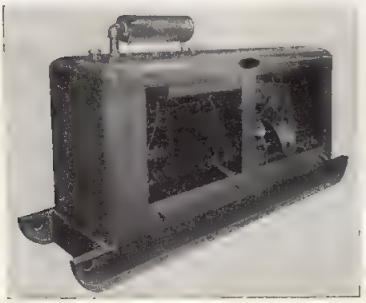
(Alternating Current Arc)

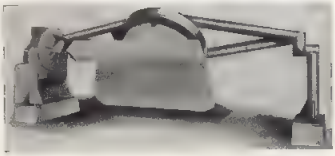
Types are available with 80 volts open circuit, 40 volt arc in ratings 200, 300, 400, 500, 750 and 1000 amperes. Stationary or with shop type wheels. Current control by screw adjusting handle in infinite steps to 25 per cent over nominal rating. Power supply 220 or 440 volt, 60 cycles.



SPOT WELDERS

Alternating current types for 220 or 440 volts, 60 cycles for steel and stainless, from two thicknesses, 20 gauge to two ¼" pieces. Capacities, 3½ to 16 KVA in bench models, 2½ to 200 KVA in floor mounted models. Foot pedal air, or motor operated—in rocker arm or press type. Arms of any reasonable length, that are reversible for vertical or 30° slant electrode holder mounting





WELDING MANIPULATORS

Three and five ton capacity—rotating and positioning work 360 degrees at all working angles.

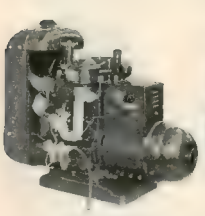
GENERATOR SETS

For alternating current generation, 110 or 220 or 440 volts, 60 cycles, three phase or single phase, or 125 or 250 volts direct current, driven by Diesel or gasoline engines from 1 KW. to 150 KVA.

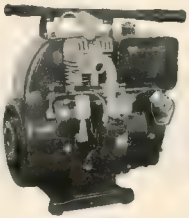
619-1-43

Winpower Gas-Electric Plants

6 to 220 Volts — 200 to 25000 Watts — A. C. or D. C.



Model V45M



Model 15DL

Model WC475M—Trailer-Mounted

Electric Service for Every Job

On some jobs high line current is available, but on a majority of them it is not. On jobs where it is not available, either the contractor has to procure some source of power, or go back to obsolete hand methods. A WINPOWER electric plant will insure the use of electric tools and in addition furnish electricity for night work.

With present high labor costs and the demand for increased speed in completing construction and repair jobs, the necessity of proper lighting and the use of hand portable electric tools, is constantly becoming a more important factor. Their ability to do the job faster, with greater safety, makes it almost impossible for a contractor to bid on jobs without having these tools as a part of his equipment.

Heavy-Duty, Rugged Construction

WINPOWER plants are built to "take it" on even the toughest jobs. All the dimensions of the plants are liberal so they will carry the capacities for which they are rated—plus a reasonable overload. In addition, to simplify the matter of service, standard accessories such as gasoline pump, carburetor, coils, ignition parts and all electrical accessories are standard to both the automotive and electrical industries. Piston rings, the main wearing parts, valve springs, or valves are usually available from any source where this material would be secured.

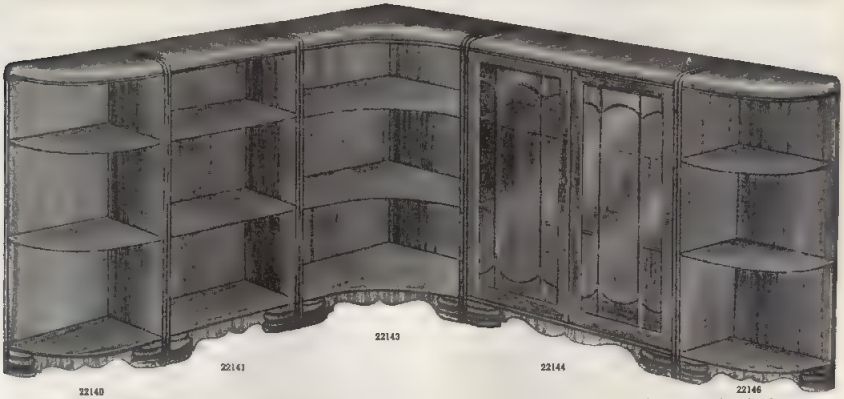
Portable Models

Portable plants are furnished with a convenient carrying handle, making the unit truly portable. Totally enclosed generator, spark plug, and ignition system permits continuous operation during wet or cold weather. Equipped with high tension magneto, they are exceptionally easy starting even in the coldest weather.

Specifications

Model No.	Watts	Volts	Starting	AC or DC	No. of Cylinders	R.P.M.	H.P.	Cooling	Ignition	Net Weight	Shipping Weight
35S	350	110	Rope Pull	AC	1	1800	1	Air	Magneto	106	133
6S	600	115	Rope Pull	DC	1	2400	1.4	Air	Magneto	83	115
7L	750	110	Rope Pull	AC	1	1800	2.1	Air	Magneto	213	273
7LS	750	110	Remote Control	AC	1	1800	2.1	Air	Magneto	241	351
10L	1000	110	Rope Pull	AC	1	1800	2.5	Air	Magneto	215	275
10LS	1000	110	Remote Control	AC	1	1800	2.5	Air	Magneto	241	351
12L	700	18	Self Cranking	DC	1	1800	2.6	Air	Magneto	150	210
	900	24	Self Cranking	DC	1	1800	2.6	Air	Magneto	150	210
	1200	32	Self Cranking	DC	1	1800	2.6	Air	Magneto	150	210
12DL	1250	110	Rope Pull	DC	1	2150	2.6	Air	Magneto	190	227
15DL	1500	110	Rope Pull	DC	1	2450	2.6	Air	Magneto	190	227
W2M	2000	110	Hand Cranked	AC	2	1800	7	Water	Magneto	150	532
W2S	2000	110	Remote Control	AC	2	1800	7	Water	Battery	110	603
W2H	2000	110	Hand Cranked	AC	2	1800	5.1	Water	Magneto	368	630
W3M	3000	110	Hand Cranked	AC	2	1800	7	Water	Magneto	150	532
W3S	3000	110	Remote Control	AC	2	1800	7	Water	Battery	110	603
W3H	3000	110	Hand Cranked	AC	3	1800	7	Water	Magneto	771	896
V4M	5000	110	Hand Cranked	AC	4	1800	14.5	Water	Magneto	840	780
V4S	5000	110	Remote Control	AC	4	1800	14.5	Water	Battery	830	875
V4A	5000	110	Automatic	AC	4	1800	14.5	Water	Battery	870	905
CWC45	5000	110-220	Hand Cranked	AC	4	1800	14.5	Water	Battery	880	1090
WC475M	7500	110-220	Hand Cranked	AC	4	1800	22	Water	Battery	1350	1550
WC410M	10,000	110-220	Hand Cranked	AC	4	1800	22	Water	Battery	1400	1600
WC615M	15,000	110-220	Hand Cranked	AC	6	1800	34	Water	Battery	2060	2350
WC620M	20,000	110-220	Hand Cranked	AC	6	1800	52	Water	Battery	2100	2400
WC625M	25,000	110-220	Hand Cranked	AC	6	1800	52	Water	Battery	2150	2450

THE NEWEST DESIGNS IN BOOKCASES FOR THE HOME AND OFFICE



ADD-A-CASE—A New idea in bookcases, for use in the home or office. A series that can be used, one unit placed side by side with another, to give the appearance of a continuous case. Any arrangement or combination as desired by the user can be selected and will match or fit up

Fireside Bookcase. Height 42 inches, width 12 inches, depth 12 inches. Left-hand case facing group. Walnut veneer in combination with select gumwood. Average weight crated 45 lbs.
22140. **$16.50**

Fireside Bookcase. Height 42 inches, width 24 inches, depth 12 inches. Left center case facing group. Walnut veneer in combination with select gumwood. Average weight crated, 55 lbs.
22141. **$20.90**

Library Bookcase. Height 42 inches, width 24 inches, depth 12 inches. Walnut veneer in combination with select gumwood. Same style as above with one grilled glass door. Average weight crated, 70 pounds.
22142. **$30.80**

Corner Fireside Bookcase. Height 42 inches, width 27 inches, depth 27 inches. Walnut veneer in combination with select gumwood. Average weight crated, 85 lbs.
22143. **$30.25**

Library Bookcase. Height 42 inches, width 36 inches, depth 12 inches. Right-center case facing group. Walnut veneer in combination with select gumwood. Two grill glass doors. Average weight crated, 95 lbs.
22144. **$40.70**

Fireside Bookcase. Height 42 inches, width 36 inches, depth 12 inches. Same style as above without glass doors. Walnut veneer in combination with select gumwood. Average weight crated 85 pounds.
22145. **$24.70**

Fireside Bookcase. Height 42 inches, width 12 inches, depth 12 inches. Right-hand case facing group. Walnut veneer in combination with select gumwood. Average weight crated, 45 lbs.
22146. **$16.50**

Shipped from Indiana Factory Cannot Be Sent C.O.D.

Bookcases That Are Attractive in Design, Beautifully Finished and Constructed to Give Service and Satisfaction.

Library Bookcase. Adjustable shelves to accommodate any size book. Grill glass door equipped with lock and key. Walnut or mahogany finish. Height 54 inches, width 25 inches, depth 13 inches. Average weight, crated 95 lbs.
22147. Walnut finish
22148. Mahogany finish
$32.50

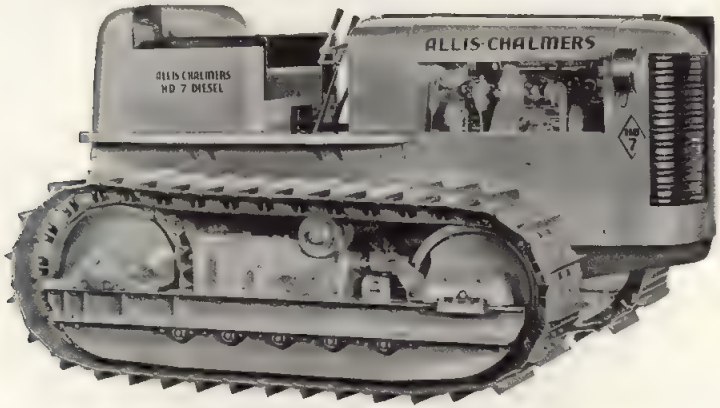
Library Bookcase. Same style as shown to the left in double door size. Height 54 inches, width 48 inches, depth 13 inches. Adjustable shelves to accommodate any size book. Grilled glass doors equipped with lock and key. Average weight crated, 130 pounds.
22149. Walnut finish
22150. Mahogany finish
$49.50

Sectional Bookcase—Library Combination. Height 50 inches, width 34 inches, depth 12 inches. This combination consists of one [illegible] bookcase section, 2 inches high inside one book section, 13 inches high inside and one base section. Additional sections may be added to the combination as your library grows. This bookcase is furnished regularly in walnut finish, red mahogany finish, brown mahogany finish, quartered office golden oak, quartered dark golden oak and quartered fumed oak. Any combination of book sections can be used with the top and base. Bookcase as illustrated, shipping weight approximately 100 lbs.

22151.	Top Section	$7.70
22152.	Book Section 9 inch	12.00
22153.	Book Section 11 inch	12.00
22154.	Book Section 13 inch	12.00
22155.	Base Section	7.70
22156.	As illustrated	51.40

FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from us which does not prove entirely satisfactory on receipt

ALLIS-CHALMERS MODEL "HD 7" TRACTOR



52" and 63" Tread Widths

Diesel Fuel

The "HD 7" has what you want in a crawler tractor. Performance to do the job faster and at a lower operating cost, and protection against loss of time and high maintenance costs. The 3-cylinder General Motors 2-cycle Diesel engine runs so smoothly you would never guess it was a Diesel, and it has the flexibility of a gasoline engine. Every down stroke is a power stroke which means that this 3-cylinder engine has the smoothness of a 6-cylinder engine. A Root blower supplies air to the engine under pressure—you do not lose power because of altitude with this 2-cycle engine. Accurately balanced and with filter and cleaners for the fuel, lubricating oil and air, this engine has the extra protection which insures long life.

No time is wasted because of clutches and brakes on the "HD 7" which is equipped with bi-metallic clutches and brakes having many times the life of ordinary fibre material. A new track release mechanism eases the strain when foreign objects get in the track. This link and lever arrangement, sealed in oil, provides additional protection and makes tracks last longer. Standard equipment includes electric starting and lights, full width crankcase guard, radiator guard, adjustable radiator shutter and an hour meter. Because this smaller tractor is not always used where danger of collision is imminent, a heavy radiator guard, bumper and pull hook are available only as special equipment along with a three-man cab, power pulley, power take-off and convertible canopy. The "HD 7" fits in perfectly with balance, power and speed whether it be scraping, hauling, logging, bulldozing or blade grading. The "WHD 7" has the stability and positive traction to work on steep grades or where footing is poor.

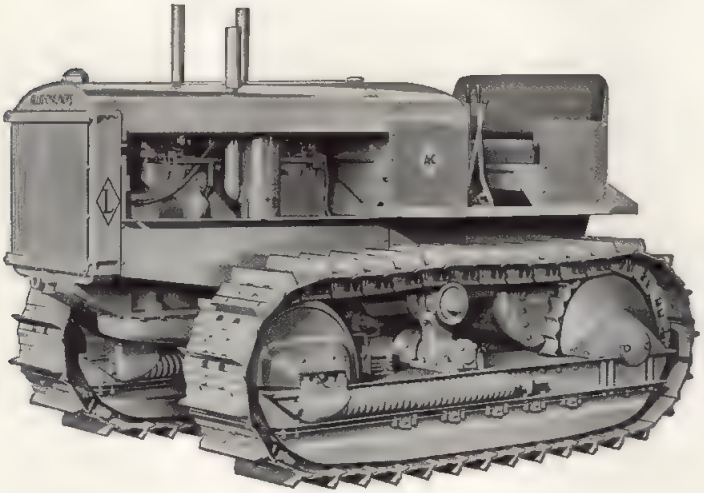
Model "HD 7" Specifications

***Horsepower at Drawbar**	**60.18**
***Horsepower at Belt**	**71.06**
Shipping Weight (Approx.) Lbs —	
63" tread	13 600
52" tread	13,260
Speeds—M.P.H. (at rated engine R.P.M.)	
First	1.84
Second	2.55
Third	3.45
Fourth	5.82
Reverse	2.19
Drawbar Pull	
First	12 171
Second	8 570
Third	6 167
Fourth	3,311
Engine	
Make	General Motors Diesel
Type	Two Cycle
Fuel	Diesel Fuel
Fuel Supplied by	Unit Injectors
Number of Cylinders	3
Bore	4¼"
Stroke	5"
Engine (Contd.)	
Piston Displacement (cu. in.)	212.2
R.P.M. Governed at Full Load	1600
R.P.M. at Maximum Torque	800-1200
Piston Speed (ft. per minute)	1250
Lubrication	Forced Feed
Tracks	
Tread—	
Wide track	63"
Standard track	52"
Length Track on Ground (center of drive sprocket to center of front idler)	67"
Ground Contact Std. shoes (sq. in.)	2144
Width of Std. Shoes	16"
Height of Grouser	2"
Track Wheels	
Number—each track	5
Type of Bearing	Tapered Roller
Lubrication	Once Each 200 Hours
General Dimensions	
Over-all Length	10'8"
Over-all Height (without stacks)	5'9½"
General Dimensions (Contd.)	
Over-all Width—	
63" tread	81"
52" tread	70"
Ground Clearance	10¾"
Drawbar Height	10¾"
Lateral Drawbar Movement	19½"
Steering	
Friction Surfaces—each clutch	22
Friction Area—each plate (sq. in.)	43.18
Total Friction Area—each clutch (sq. in.)	950
Clutch Friction Material	Bi-metallic
Brake Friction Material	Bi-metallic
Capacities	
Cooling System—gallons	5¾
Crankcase—quarts	8½
Transmission Case—quarts	21
Final Drive—each—quarts	4
Fuel Tank—gallons	31

*Corrected to sea level barometric pressure and standard temperature of 60° F. (For complete official test of Model "HD 7" tractor, see University of Nebraska Test Report No. 360.)

28-3-41

ALLIS-CHALMERS MODEL "L" TRACTOR



Gasoline or Butane

For a big, fast yet economical gasoline tractor, the Model "L" fills the bill. Its high compression, valve-in-head engine, with removable cylinder sleeves, inserted valve seats and full force-feed lubrication provides ample power for every job. Air, oil and fuel filters keep the engine free of dirt and dust at all times. Every gear in the Model "L" is made of carburized and hardened alloy steel. Eight speeds—six forward and two reverse—give unequalled performance in handling bulldozers, trailbuilders, sheepsfoot tampers, 12-yard scrapers, 10 to 18-foot snow plows, 8 to 12-yard wagons, 12 to 14-foot graders and 42 or 48-inch elevating graders. Equipped with a pusher plate, the Model "L" is an ideal pusher tractor—increasing the yardage output of scraper fleets and enabling companion "L's" to handle larger scrapers if desired. In sections where butane fuel is available, a conversion to this clean-burning fuel is easily made with a decided saving in fuel costs. The Model "L" is a tractor in which horsepower, weight and traction are properly balanced to give you tremendous pulling power, high speeds, weight to enforce traction and greater flexibility.

Model "L" Specifications

***Horsepower at Drawbar**	91.50
***Horsepower at Belt**	110.15
Shipping Weight (Approx.), lbs.	23,150
Speeds—M.P.H.	
First	1.48
Second	1.94
Third	2.68
Fourth	3.50
Fifth	4.90
Sixth	6.41
Reverse—Low	1.72
Reverse—High	2.25
Drawbar Pull—Max. Lbs. (at rated engine R.P.M.)	
First	23,851
Second	18,410
Third	12,919
Fourth	9,770
Fifth	6,441
Sixth	4,519
Engine	
Type	Valve-in-Head
Fuel	Gasoline
Engine (Contd.)	
Number of Cylinders	6
Bore	5½"
Stroke	6½"
Piston Displacement (cu. in.)	844
R.P.M. Governed at Full Load	1050
Tracks	
Tread (center to center)	68"
Length Track on Ground (center of drive sprocket to center of front idler)	85½"
Ground Contact Std. Shoes (sq. in.)	3418
Width of Std. Track Shoes	20
Height of Grouser	2⅝"
Truck Wheels	
Number Each Side	5
Type of Bearing	Tapered Roller
Lubrication	Once Each 200 Hours
General Dimensions	
Over-all Length	12'9¼"
Over-all Height (without stacks)	6'9¼"
Over-all Width	7'9"
General Dimensions (Contd.)	
Ground Clearance	16¾"
Drawbar Height	15½"
Lateral Drawbar Movement	35"
Steering	
Number Friction Surfaces—each clutch	36
Friction Area—each plate (sq. in.)	78.54
Total Friction Area—each clutch (sq. in.)	2827
Capacities	
Cooling System—gallons	19
Crankcase—quarts	24
Transmission Case—quarts	40
Final Drive—each quarts	9
Fuel Tank—gallons	75

*Corrected to sea level barometric pressure and standard temperature of 60° F. (For complete official test of Model "L" tractor, see University of Nebraska Test Report No. 838.)

28-4-41

November a swell for hunting
But this year it seems flat
The only men worth hunting for
Are hunting for a cat!

[redacted]

I Wees Christmas to you all
I'm off to join the WAACs,
And serve the country that I love
Until the Axis cracks

Copyright 1943, The Pullman Company

"Tomorrow night — Fort Knox !"

"We're a little late tonight, folks!

"Just time to remind you that this broadcast has come to you from Great Lakes Naval Training Station, outside Chicago. Tomorrow we'll be with the boys at Fort Knox, Kentucky. 'Til then, this is Harry Von Zell saying—*Good Night!*"

Then a tired troupe of entertainers hurries to the Pullman car that's been "home" to them for weeks.

Like scores of other radio, screen and stage stars who are giving time and talent so generously to brighten training camp routine, these folks travel almost constantly. So do huge numbers of civilians engaged in war activities. And thousands of service men on leave.

In spite of this record-breaking traffic, Pullman's usual high standards could be maintained if *all* sleeping cars were in regular passenger service. But they aren't. Many have an even *more* essential war job. Made up into special troop trains, they move an average of almost 30,000 men in uniform a night.

So, with *more* people seeking space in *fewer* cars, "going Pullman" is not what it used to be.

Fortunately, most wartime passengers don't seem to mind. Hard-pressed by long hours and heavy responsibilities, they prize simple rest and relaxation far above the *extra* services of peacetime Pullman travel. To them, a good day's work *tomorrow* depends on a good night's sleep *tonight*.

And that's so important to so *many* people that when *you* plan to "go Pullman," please.

Ask yourself: "Is my trip *necessary?*" If it *is*, then . . .

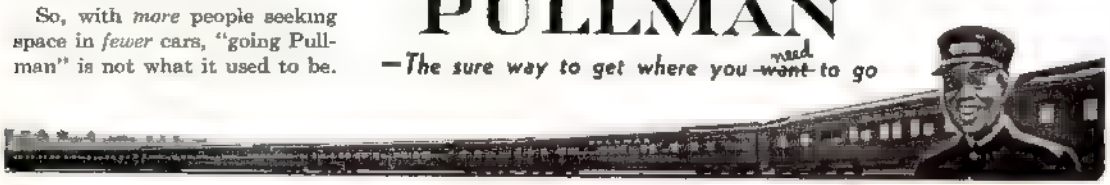
Ask your Ticket Agent on which days trains may be least crowded on the route you want to take. Try to go on one of those days if you can.

Travel light and give yourself and fellow passengers the room that excess baggage would take

Cancel promptly, if your plans change, and make the Pullman bed reserved for you available to someone else.

PULLMAN

—The sure way to get where you ~~want~~ need to go



Copyright 1943, The Pullman Company

"Bet I come back hitched !"

Mother will bring him breakfast in bed. Dad will talk of Belleau Woods and how they did it in '18. Mary—well, she's half-way promised there'll be a moon—and leave it to a Marine with two weeks' leave to get "the situation well in hand"!

So Pullman has *another* passenger tonight—this lieutenant heading home—*another* reason wartime travel is at an all-time high. And besides the huge load on *regular* trains, an average of almost 30,000 troops a night ride *special* trains of sleeping cars.

So sometimes, it's a pretty tight squeeze to take care of *everyone*, especially in the customary Pullman manner. But most passengers realize the difficulties and are tolerant of shortcomings.

And it's not only that they say, "Troops come first with us, as they do with Pullman." It's also that *wartime* travelers don't seem so concerned about the free choice of accommodations and the lavish services that made peacetime Pullman trips such memorable occasions. That's probably because what people want from Pullman *now* are the *fundamental features* rather than the frills.

The privacy and comfort that permit a few golden hours of utter relaxation. That present an opportunity to do some quiet thinking beyond the jangle of a telephone. That invite gently but insistently —the deep, untroubled sleep that "knits up the ravell'd sleeve of care."

These things may seem little in themselves, but they are of vast importance to those whom war drives hard because a good day's work depends a lot upon a good night's sleep. So ask yourself, "Is my trip *necessary?*" If it is, please:

Cancel promptly, when plans change, so someone else can use the bed reserved for you.

Travel light and give yourself and fellow passengers the room that excess luggage would take up.

Ask your Ticket Agent on which days trains may be least crowded on the route you want to take. Try to go on one of those days if you can.

PULLMAN

America's Most Comfortable Way To Travel

—THE SURE WAY TO GET WHERE YOU WANT TO GO

HANDLE WITH CARE!
Contents of this head essential to winning the war. Place on soft pillow in comfortable Pullman bed and deliver rested, refreshed and ready to pitch in.

THIS is a war of movement at home as well as abroad.

The men responsible for thinking things out and getting things done must be here today—there tomorrow—somewhere else on Tuesday. And they must be not only *at* the job, but *on* the job, for how well they *do* the job is mighty important to Uncle Sam.

That's where Pullman comes in.

When you go Rail-Pullman, you get there—safely and dependably. You get the service and the privacy that make your trip a pleasant interlude. And you get the *sleep* going you need to *keep* going at an all-out wartime pace.

● The exact accommodations you request may not always be available, for it takes many sleeping cars to move an average of almost 30,000 troops a night. But whether you sleep in an upper, a lower, or a room, you'll get a good rest in a swell bed whenever you

Go Pullman

Copyright 1943, The Pullman Company

Copyright 1943, The Pullman Company

"Mother! Bob's ship's in!"

A thousand miles away, a bronzed young ensign has stepped ashore for the first time in months. And a Navy bride has just received the happiest words in the world.

Tonight, she'll be speeding to him for a brief, belated honeymoon before he puts to sea again.

She is one more reason trains are crowded now and Pullman travel is the heaviest in history. There'd be no problem handling such a load if the whole Pullman fleet were in regular passenger service. But it isn't. Many cars are assigned to special troop trains, moving an average of almost 30,000 men a night.

So *fewer* cars must serve *more* people. And there are bound to be some inconveniences, at times. Occasional disappointments, too. But more wartime travelers cheerfully accept whatever accommodations are available.

That's partly because they feel, as Pullman does, that boys in uniform come first. And partly because they look on Pullman travel now not simply as an overnight adventure in a sumptuous way of life but as an overnight *vacation* that refreshes weary minds and tired bodies.

It relaxes taut, strained wartime nerves. Gives passengers a precious opportunity to do *nothing* for a change and thus, as like as not, starts those little grey cells to working on thoughts there hadn't been time to think. Then, when bedtime comes, Pullman privacy and comfort *invite* sleep so compellingly that the cares of a war-torn world dissolve in pleasant dreams.

So, if yours is a *necessary* trip—one on which you must get there feeling fit to do the *total* job that *total* war requires *go Pullman*, by all means.

You'll have a place to sit and a place to sleep that are *all yours* straight through to your destination. And you'll be leaving coach space for *necessary travelers* who can't afford the privacy and comfort you'll enjoy.

★ BUY MORE WAR BONDS NOW! ★

PULLMAN

FOR EIGHTY YEARS

THE GREATEST NAME IN PASSENGER TRANSPORTATION

FOR COMFORT AND SAFETY AS YOU GO AND CERTAINTY THAT YOU WILL GET THERE

Copr. 1943, The Pullman Co.

When standing still means *full speed ahead*

YOUR CRACK PASSENGER TRAIN stands on a siding while a heavy freight or troop train rumbles by. Men, munitions and material . . . *full speed ahead* for war.

And the slight delay in your train clears the track for Uncle Sam!

"We'll *keep 'em rolling!*" says the railroads. And what a magnificent job of it they're doing! Pullman knows, better than most, because Pullman works shoulder-to-shoulder with *more than one hundred* different railroads, though it is actually a part of none.

From this unique position, Pullman can give you an accurate, impartial, "eye-witness" account of the amazingly efficient manner in which these roads are carrying out their wartime duties.

For example:

Daily deliveries of *oil by rail* to Eastern states are now *65 times as great* as they were before Axis submarines started to sink tankers.

Latest figures on coal shipments to New England are 60 per cent greater than those for a year ago. There is a 30 per cent increase in ton-mile freight service

And total passenger traffic is more than doubled!

That's where we come in. And the way the railroads —all of them—are handling Pullman sleeping cars is right in keeping with the splendid record they are making in *every* phase of wartime transportation.

Each Pullman car—on the average—now operates at an all-time high in number of passengers carried and, thanks to *faster handling*, in miles traveled per day.

Yes, Pullman's hat is off to the railroads. Yours should be, too. They'll *keep* 'em rolling—we'll *sleep* 'em rolling. That's our *wartime job!*

AN AVERAGE OF MORE THAN 25,000 TROOPS A NIGHT NOW—

GO PULLMAN

Buy War Bonds and Stamps Regularly!

Copyright 1943, The Pullman Company

"I'm as sunk as a Jap destroyer!"

"Having a baby is tough enough on a soldier, without it coming ahead of time.

"So I was plenty excited when I hot-footed it to headquarters after getting that long distance telephone call.

"The C.O. was swell about it, though, when I asked could I go home. Gave me a furlough quick as you can say "Paratroops", which is what I'm training for. I got a lift in here from camp—feeling grand—but now I'm as sunk as a Jap destroyer because . . .

"I'm stuck! The plane was sold out and the only train home until morning is the all-Pullman Limited—leaving in ten minutes with every bed reserved!

"Now, I wouldn't mind so much, if I was overseas with no chance of getting home—like lots of guys when their babies are born. I could take that without crabbing, as a part of war.

"What burns me up is that here I am only a few hundred miles away—with a perfectly good furlough—and it looks like I'll stew in the station all night long. That's war, too, I suppose—travel being so heavy—but by the law of averages you'd think that *someone* with a reservation on that train would change his plans and not be able to use it.

"And this being wartime, you'd think he'd *surely* cancel it, so someone else could go!

"There's still 10 minutes for that to happen. That's why the railroad and Pullman people—who've practically turned this station inside out trying to help me—said to stick around. It'll be a miracle if I get on that train, but . . .

"Miracles still happen! And, brother, that guy who *cancelled* instead of just not showing up *rates a medal* in my book!"

Although sleeping cars are loaded to a higher percentage of capacity than ever before, practically every train carrying Pullmans still goes out with *unused* space due to "no shows" and late cancellations.

So *please* cancel well in advance of train departure, when plans change, and make the Pullman bed reserved for you available to someone else.

★ *BACK THE ATTACK—WITH WAR BONDS* ★

PULLMAN

THE GREATEST NAME IN PASSENGER TRANSPORTATION

FOR COMFORT AND SAFETY AS YOU GO AND CERTAINTY THAT YOU WILL GET THERE

Copyright 1943, The Pullman Company

"Okay, guys – this is it!"

Assembly in 20 minutes. Full kit and no farewells. Their next letters home will be V-mail; their address an APO. That's what travel orders mean.

To Pullman, those orders mean that sleeping cars must be waiting when the boys are ready to roll. 20 cars here – 40 there – 100 somewhere else. Every night, special trains of Pullmans move an average of almost 30,000 troops.

That takes a lot of cars. It leaves only *part* of the Pullman fleet to handle regular passenger travel that is far heavier than in peacetime, when the *whole* fleet was available. So no wonder trains are crowded and accommodations sometimes scarce.

But most passengers understand the situation. And the fact that boys in uniform come first with them, as they do with Pullman, is not the only reason for the tolerance with which they take whatever space is open. It's also that *wartime* travelers seem to look on Pullman in a different light. A Pullman trip, to them, is no longer simply the gay adventure in good living that it was before the war. Now, Pullman privacy and comfort are a *means* to an end instead of an end in themselves.

They help a harassed man relax from the drive of a troubled day. They give him a few restful hours – undisturbed – in which to think things over. Then, when bed-time comes, they invite the deep, refreshing sleep from which a wartime traveler wakes with the new energy and vigor he needs to do the kind of job that Uncle Sam expects of him.

These things, though they may not themselves win battles, are *important* to those whom war keeps on the go. So *please:*

Cancel promptly, when plans change, and make the Pullman bed reserved for you available to someone else.

Travel light and give yourself and fellow passengers the room that excess luggage would take up.

Ask your Ticket Agent on which days trains may be least crowded on the route you want to take. Try to go on one of those days if you can.

PULLMAN

America's Most Comfortable Way To Travel

—THE SURE WAY TO GET WHERE YOU WANT TO GO

OUTREACHING
means
OUTPUNCHING

• The longest streak of lightning in the world is flashing through the skies! Super-range Lightning P-38 fighter planes team up with heavy bombers to deal knockout blows at distant targets.

On the production front smoothly-operating teams of Rohr production fighters work 'round the clock to help Lockheed put more and more of these outreaching P-38's on the wing. They use their skills to add new punch behind the challenge of increased production. They work to save the lives which will be spared by quicker victory.

HELPING TO WRITE THE STORY OF TOMORROW

ROHR
AIRCRAFT
CORPORATION

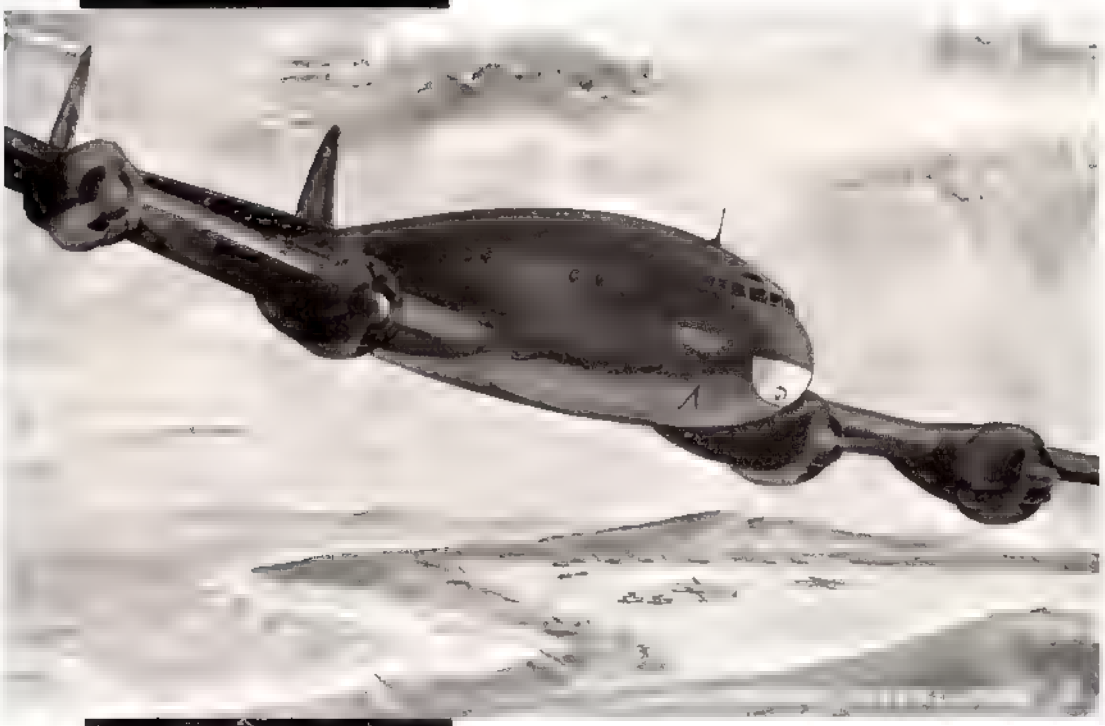
CHULA VISTA, CALIFORNIA

ROHR

PARTS ✪ ASSEMBLIES

"Get thar Fustest with the Mostest!"

Expressive phrase of a famous Confederate fighter



BUILD 'em *bigger,* fly 'em *faster,* do it *first* and do it in *quantity*--America's axiom for supremacy of the air! No goal in American history was ever more urgent! ROHR production fighters force their tasks of precision parts manufacture and vital assemblies toward this end. ROHR-equipped air giants fly to battle in ever-increasing numbers, rushed there by the men and women on production lines who know that *speed saves lives!*

HELPING TO WRITE
THE STORY OF TOMORROW

ROHR AIRCRAFT CORPORATION *CHULA VISTA, CALIFORNIA*

Victory hangs in the balance.

ROHR

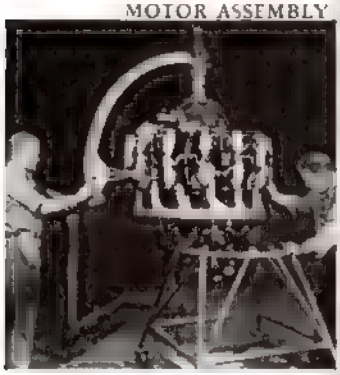
PARTS ☆ ASSEMBLIES

The **ROHR** *TILTING* Arc is typical of American ingenuity which is swinging the production balance further in favor of the Allies. It is just one of the many specially conceived devices and methods by which Rohr Production Fighters speed their thousands of tasks to ready Rohr equipped planes for the war front.

The Rohr Tilting Arc enables *fewer* men to turn out *more* work in *less* time and with *less* fatigue. It suspends heavy aviation motors in so delicate a balance that the pressure of a workman's hand moves them to any position within a 90° arc. Its application to fields of final assembly and advanced base repair increases its win-the-war service immeasurably.

HELPING TO WRITE
THE STORY OF TOMORROW

CLEANING A MOTOR
MOTOR ASSEMBLY



MATING A WING
FIELD SERVICE

ROHR AIRCRAFT CORPORATION *CHULA VISTA, CALIFORNIA*

Amazingly enough, **shipboard radio receivers "tattled" to enemy subs . . .**

until the danger to ships and men brought forth the **Scott Marine Model Radio!**

Do you know why the Federal Communications Commission banned all shipboard entertainment radios? Because, the instant they were turned on for listening they divulged the ship's position . . . much farther than the 10 or 15 miles most officers and men believed possible. Actually a receiving set rebroadcasts a signal *detectable as much as 100 miles away* by sensitive enemy direction-finders.

To eliminate this hazard, the Federal Communications Commission urged radio manufacturers to develop a *safe* radio for use at sea. In less than a month Scott engineers invented a special Marine Model that can't be detected 25 feet away—fully approved by the Federal Communications Commission!

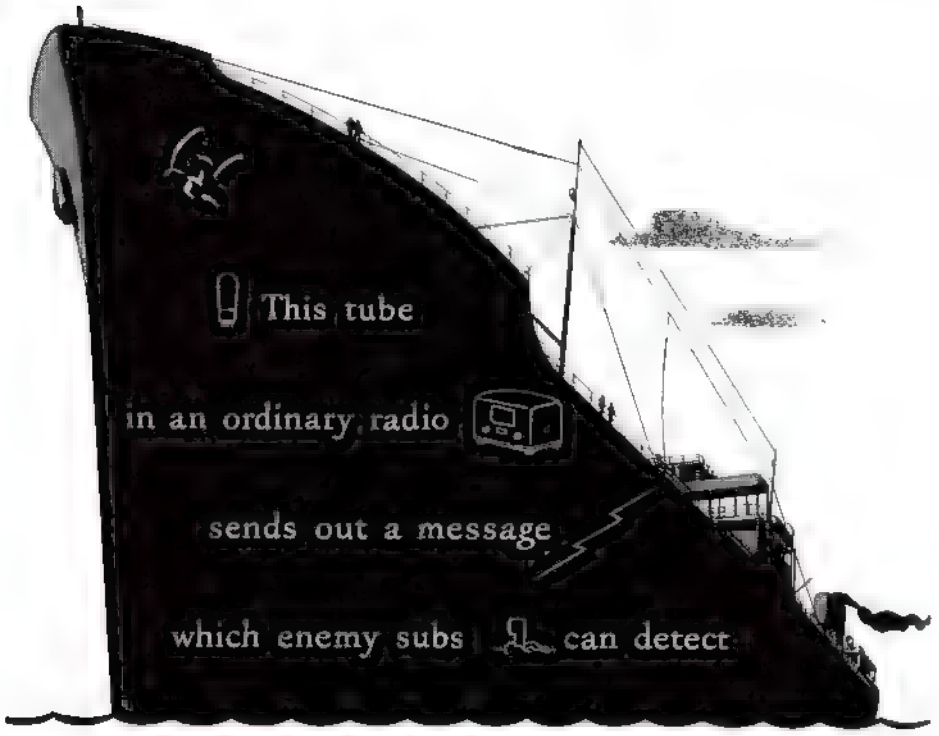
The Scott Low-Radiation Receiver is the *first* radio that can be operated with complete safety on *both* the broadcast and shortwave bands essential to good reception far from land under difficult shipboard conditions. The SCOTT has become the toast of seamen and sailors wherever ships now sail. You'll soon find SCOTTS on tankers, on merchantmen, on American ships of every kind as fast as we can get them there . . . giving our men at sea the programs, the news from home, the relaxation they need and deserve, *in safety.*

SCOTT
Marine Model
LOW-RADIATION
RECEIVER

• The Scott Marine Model is for marine use exclusively and is available for shipboard installations under priority ratings.

SCOTT
FINE RADIO RECEIVERS

E. H. SCOTT RADIO LABORATORIES, INC.
4450 Ravenswood Avenue, Chicago



A blessing to men at sea . . .

the Scott Marine Model Radio is mum to the enemy

What nobody was concerned about, until torpedoes taught us, is that a radio set *re-broadcasts* a signal while it is *receiving.* Sensitive range finders picking up this signal could spot our vessels 100 miles away.

But the Federal Communications Commission stopped all that—banned radios from shipboard until a safe entertainment radio could be produced. Radio manufacturers were asked to find the solution. Scott engineers, accustomed to tough problems of research, invented a new set in 30 days—won approval from the FCC and won thanks from our men in all the services, on lonely waters, cut off from news broadcasts and favorite programs.

SCOTT
Marine Model
LOW-RADIATION
RECEIVER

•The Scott Marine Model is for shipboard use exclusively and is available for installation under priority ratings.

The Scott Low-Radiation Receiver is the *first* radio that can be operated with complete safety on both the broadcast and shortwave bands essential to good reception far from land under difficult shipboard conditions. You'll find Scotts on tankers, on merchantmen, on American ships of every kind . . . as fast as we can get them there . . . giving men at sea the programs, the news from home, the relaxation they need and deserve, *in safety.*

SCOTT
FINE RADIO RECEIVERS

E. H. SCOTT RADIO LABORATORIES, INC.
4450 Ravenswood Avenue, Chicago

Partners with Industry!

The railroads of America are backing industry to the limit in the war of production. Only the close coordination born of a common cause could result in the extraordinary achievements of transportation and industry since the war began

For many years the Seaboard Railway has recognized the interdependence of industry and transportation.

On the established principle that the welfare of the railroad depends upon the prosperity of its patrons, the Seaboard has been working over a long period of time for the economic development of the territory it serves.

The Seaboard's interest extends beyond the location of new plants. It is equally concerned with the success of all industry served by its Line. Its policy is to provide adequate service and to adjust the freight rates on raw materials and finished products to enable these industries to compete with similar industries whether located in the South or elsewhere.

Remarkable progress has been made in the industrial development of the South in recent years. Present indications point to further expansion in the post-war period.

Seaboard will work in the future—as in the past—as Partners With Industry

SEABOARD RAILWAY

ONE OF AMERICA'S RAILROADS • ALL UNITED FOR VICTORY

BACK THE ATTACK
WITH WAR BONDS

After the War is over...

SEE SAN FRANCISCO

A day will come when the smoke of war will lift from around the globe. Then you will feel afresh the appeal and promise of America at peace. You will want to see it all.

The sun will point an enticing way for your first journey—over sweeping roads through the wonderful West—to San Francisco.

Following a route of the pioneers who expanded America, you will easily imagine their bivouacs and covered-wagon trains, as you relive their epic adventure in the mighty scenes through which they passed, all along the way.

Then San Francisco!... rising on its towered hills across the bay, to form a pastel-tinted rampart for the great Pacific harbor and its shipping. A colossal bridge over the Golden Gate... another over the bay... hills all around. It is one of the world's grand sights.

San Francisco will delight you endlessly, as it has all men and women of imagination since the Gold Rush Days. From hilltop views to storied byways, the city is packed with contrasts, romance and adventure.

You will explore such scenes as Chinatown, Golden Gate Park, Fishermen's Wharf, the long Embarcadero; revel in debonair shops and bazaars; take in shows, museums and other diversions; dine and dance in gay hotels and night clubs; play at almost any sport...

Then you will enjoy excursions into the wonderland this city centers... Yosemite National Park, for instance; the lovely Monterey Bay country; the valleys of fruits, wines and old Missions; the Shasta-Cascade region; Lake Tahoe and the gold towns of the '49ers; cathedral forests of Redwood giants...

All this is something to look forward to for after the War is won... your Victory Vacation, if you will. Meanwhile, San Francisco, virtually West Coast capital of America at war, is very busy, as are all the other communities around vast San Francisco Bay and throughout this region. And you are busy, too.

Nevertheless, it may give you relaxation just to look ahead and plan your Victory Vacation. So send today for your free copy of our 48-page illustrated booklet and a large picture-map of California. Mail the coupon now.

CALIFORNIANS INC.

Dept. 505, 703 Market St., San Francisco, California.

Please send me your free illustrated booklet, "The Chapter in Your Life Entitled San Francisco," and the free picture-map of California. Thank you

Name _____

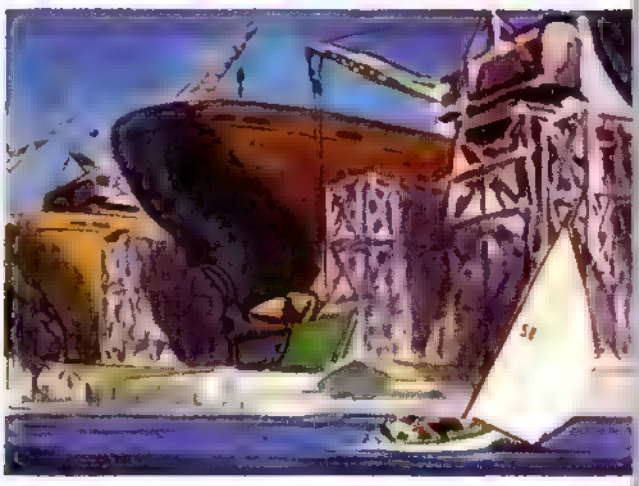
Street _____

City _____ *State* _____

How a playground goes to war!

Southern California swings into action with a 5 point program

1. Climate is put to work! Our sun-drenched days do more than recondition tired bodies. We build our planes on long, *outdoor* assembly lines. Check them in the desert sun. Give them their fledgling's test in azure skies.



2. New Champions are developed! Our sports champions of yesterday excelled in breaking records. We're breaking 'em today . . . where ships are launched in steady file . . . where barges, 'chasers, landing tanks, guns are built.

3. Land is made to mass-produce! For the Services, for Allies...orange juice concentrates for Britain's children... pectin from lemon peel—a blood serum alternate for treatment of shock...guayule rubber...petroleum war products.

4. America is kept united! Yes—and *thinking* and *eager*, too. Our movie people (who also make training films) and radio folk are roadshowing America, selling it war bonds, entertaining the boys—*giving* in endless profusion.

5. A new type of visitor is taken in hand! Yes, that wonderful boy from your home, your town. He's here for training. These visitors are very *special*. They come into our churches, into our homes. And, many of them say: "We're coming back, after the war."

We hope *they* do and *you* do, too—and that, to pay for your trip here after the war, you buy war bonds *today*. For valuable, trip-planning information, check and mail the coupon.

***Essential* Travelers Only.** Patriotism demands you use transportation wisely. If you are coming today on business, or to visit boys in training, or, if you are a soldier or a sailor visiting on furlough, the ALL-YEAR CLUB, Southern California's non-profit community organization has special, free wartime services for you at its famous VISITORS' BUREAU at 505 West 6th Street, in Los Angeles, California. Send coupon at right for valuable, explanatory folder.

SOUTHERN CALIFORNIA

This advertisement sponsored by Los Angeles County Board of Supervisors brings you a wartime message from the citizens of the County's rich agricultural and industrial areas and of its famous cities — Beverly Hills, Glendale, Hollywood, Long Beach, Los Angeles, Pasadena, Pomona, Santa Monica and 182 others.

Copr., 1943, by All-Year Club of So. Calif.

All-Year Club of Southern California, Dept. C-2
629 So. Hill St., Los Angeles, Calif.

☐ Please send me information to help me plan a postwar vacation in Southern California.

☐ Please send free folders of Helpful Hints for wartime travelers to Southern California.

Name _____

Street _____

City _____ *State* _____

(Please print name and address)

© 1943, The Studebaker Corporation

"You purr just like those engines Dad builds!"

They're Studebaker-built Wright Cyclones for the famous Boeing Flying Fortress

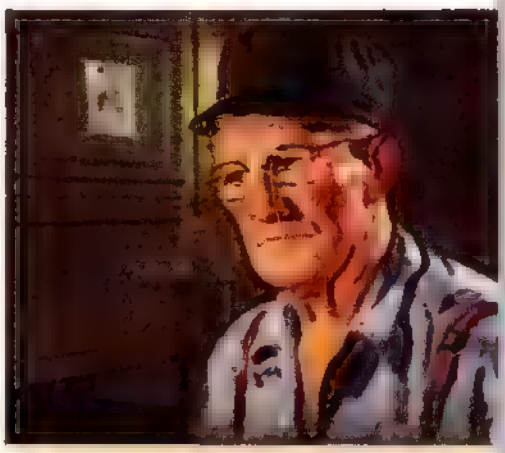
SOLDIER HARRY RYAN and his father were fellow craftsmen in the Studebaker factory prior to Pearl Harbor. They comprised one of the many father-and-son teams that have made the quality of Studebaker craftsmanship famous since 1852.

Today, large numbers of younger men, who once were Studebaker craftsmen, are using instead of building military equipment. In many instances, their fathers, and other older members of their families, are producing Flying Fortress engines, multiple-drive military trucks and other war matériel in the busy Studebaker plants.

Studebaker craftsmanship is now at work in behalf of our Nation and its Allies. It will provide finer Studebaker motor cars and trucks than ever, after Victory comes.

STUDEBAKER

Builder of Wright Cyclone engines for the Boeing Flying Fortress, big multiple-drive military trucks and other vital war matériel



"Always give more than you promise" That Studebaker watchword has been observed for 20 years by craftsman Henry C. Ryan. He is helping to build Cyclone engines for the Flying Fortress in one of Studebaker's aircraft engine plants. Some day, he and his soldier son, Harry, hope to build Studebaker cars again for you.

Studebaker's big military trucks stand out in all the major war zones

IN virtually every theater of this global war, mighty military trucks produced by Studebaker are moving the men and supplies of the United Nations.

From the Alcan highway to the Russian front, from Africa to China, tens of thousands of these big Studebakers have been writing brilliant new pages of transport history.

The stand-up stamina of these rugged Studebaker trucks is nothing new. It's as old as the Studebaker business. It goes back more than 91 years to the days when the Studebaker brothers made the phrase, "give more than you promise," the watchword for all Studebaker activities.

Studebaker today is one of the world's leading builders of big, multiple-drive military trucks—and is also producing great quantities of powerful Wright Cyclone engines for the Boeing Flying Fortress as well as much other vital war matériel.

Send 10¢ for a beautiful reprint of this Flying Fortress painting—This dramatic picture of a Flying Fortress is available in 24x22 inch size on a special stock suitable for framing, free from advertising. Address Studebaker, South Bend, Indiana, enclosing 10¢ to cover mailing cost.

A NOTABLE RECORD

1918 15,292,000 G.T.M.
1942 48,928,000 G.T.M.

. . . an increase of 319% in gross ton miles. The modern steam locomotive with small flue boiler and Elesco superheater provides the increase in evaporation and superheat that was not available in 1918.

Modern steam locomotives are equipped with modern design Elesco superheaters.

ELESCO

A-1617

SUPERHEATERS • FEEDWATER HEATERS
AMERICAN THROTTLES • STEAM DRYERS
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THE SUPERHEATER COMPANY, LTD.

The Australian Sea Horse

ONE OF THE MOST fantastic of all marine creatures is the Australian Sea Horse or Sea Dragon (*Phyllopteryx eques*).

His home is among the waving seaweeds on the coral banks of Indo-Pacific waters. About ten inches long when fully grown, he is small in comparison to many of his enemies. He has no means of defense. And, because of the upright position in which he carries himself, he is a very poor swimmer. He cannot escape by flight.

With these handicaps, the Sea Dragon would long ago have become extinct were it not for his remarkable protective camouflage and the convenient prehensile tail which enables him to make this camouflage effective.

Long, leafy appendages extend from his body. In shape, color, and texture these appendages so closely resemble his seaweed habitat, that it is almost impossible to distinguish the fish from the plant, once he has hooked himself to it by means of his unique tail.

Anchored thus, he is safe from the treacherous currents that might sweep him from his hiding place out into full view of his enemies. In this way he usually manages to escape notice.

Now there is no anchor that can keep a man in a safe spot where an accident can't overtake him. And, obviously, there is no camouflage that will hide him from trouble, either.

But there is a convenient anchor which will protect him from the financial consequences of an accident once it has happened.

This anchor is insurance; and since the chances are actually one in ten that you will meet with an accident of some kind during the coming year, you can't afford to be without the protection of accident insurance at any time.

If stumbling over something in a blackout, or some other mishap around your house or away from it should land you in the hospital for several weeks, accident insurance will take care of your hospital bills. It will also provide an income for your family while you are kept away from your job.

Your local Travelers agent will be glad to explain to you how accident insurance can be an effective, yet inexpensive part of a well-rounded insurance program.

MORAL: Insure in The Travelers. All forms of insurance. The Travelers Insurance Company, The Travelers Indemnity Company, The Travelers Fire Insurance Company, Hartford, Connecticut.

This fellow can bite his way into trouble

WITH HIS STRONG, cutting teeth, the beaver can fell a tree eight or ten inches in diameter. He is also adept at trimming off branches, and he can quickly cut a fallen tree into neat, easily handled logs.

But, when a beaver cuts down a tree with his big, chisel-like teeth, he quite frequently bites his way into trouble. You see, beavers, like men, get careless. And naturalists report instances of these flat-tailed lumbermen being killed or injured by falling trees.

But the beaver's industrial safety record probably beats man's. Last year alone, industrial accidents in this country caused 18,000 deaths among workers, permanently disabled over 70,000, and resulted in the loss of 42,000,000 man-days.

At any time, this would be a sorry record. But now, when success or failure in this war depends so much upon production, it represents a real danger to this country. Fortunately, however, there is a proven way to reduce these industrial accidents.

Many contractors and manufacturers do it by enlisting the aid of Travelers Safety Engineers. These men are trained trouble shooters. Years of experience have taught them that working habits which lead to accidents form a definite pattern. They have learned, too, that 9 accidents out of 10 are due to man's own careless working practices, and they know what these practices are.

This knowledge enables Travelers Safety Engineers to spot the kind of carelessness liable to cause accidents, long before an accident takes place. It is the big reason why they have had almost unbelievable success in reducing industrial accidents and thus speeding up war production.

Hundreds of stories can be told about what these experts have done for others. You can learn what a Travelers Safety Engineer can do for you by calling the nearest Travelers office. It is likely he will be able to reduce the accidents in any factory or industrial operation, or hold them to a minimum on any construction project. His work frequently results in lower insurance costs.

MORAL: Insure in The Travelers. All forms of insurance and fidelity and surety bonds. The Travelers Insurance Company, The Travelers Indemnity Company, The Travelers Fire Insurance Company, Hartford, Connecticut.

The bird that uses insect police

HANGING FROM the great ceiba trees in Central America are strange, sack-like objects about six feet long. Often, there are fifty or more on a single branch, swaying in the wind. They are the colony nests of the cacique, or tropical oriole.

The eggs in these nests are looked upon as choice food by many of the cacique's enemies. In addition to the ocelots or forest cats, there are giant lizards and raccoon-like animals which are expert nest-raiders. And, being adept at tree climbing, they can easily reach the eggs even at a great height.

If it were not for the ingenious way in which the caciques provide themselves with a municipal police force, their chances of survival would be poor indeed.

To secure this unusual protection, the caciques build their colony on the same branch that holds a large nest of tropical wasps. Although these insects do not seem to be annoyed by the activities of the birds, they are aroused to fury if any intruder tries to push past them. And no animal, however fearless, would twice risk their vicious attack.

As the cacique always makes sure that his police guard is between the nesting colony and the tree trunk, his home is safe. Only if the wasp nest should be destroyed or abandoned, would this police protection fail him. But, then his loss would be complete.

Man also has police protection for his home against unwelcome intruders. But, in wartime, especially, with dimouts and a reduced police force, this, too, may prove inadequate.

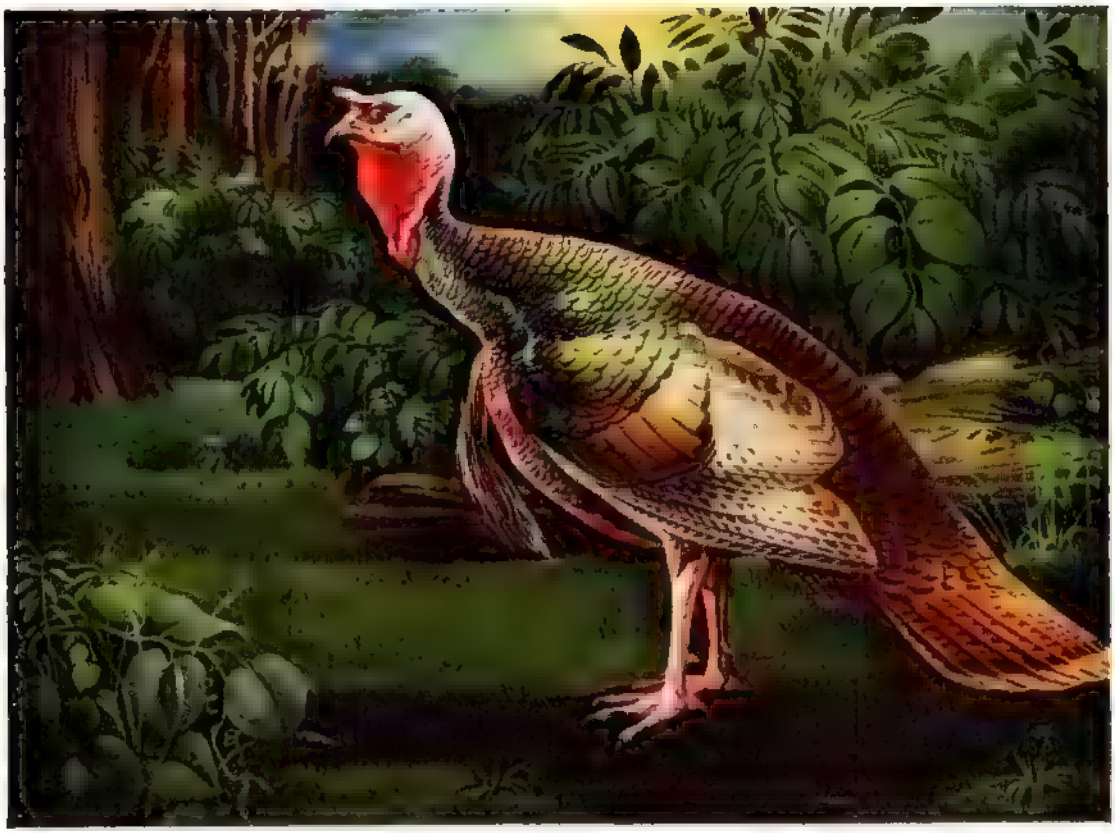
There is, however, one other protection man can have for his home, that will not fail him. This protection is burglary insurance which will enable him to replace the loss and to repair any damage done to his home when a burglary does occur.

And, today, burglary insurance offers even broader protection than ever before. For it covers not only property stolen from your home, but personal property stolen from you anywhere in the United States or Canada.

If you do not carry burglary insurance, or if you have not checked on it lately, consult the Travelers agent or broker in your own community.

Not only do you need this protection more than ever before, but you may find that the policies you already own are no longer sufficient to cover the present, higher value of your property.

MORAL: Insure in The Travelers. All forms of insurance. The Travelers Insurance Company, The Travelers Indemnity Company, The Travelers Fire Insurance Company, Hartford, Connecticut.



This bird takes no chances

ALMOST ANYONE who has hunted the wild turkey, will tell you that it is one of the most cautious of all birds.

Wild turkeys can be shot, but it isn't easy. If a hunter plans to shoot from a blind, he can't build the blind all at once, but must do it in stages long before the hunting season starts so that the turkeys have a chance to get used to it.

Even then, it is said that if so much as a fallen branch in the immediate vicinity of the blind is disturbed, the keen-eyed, careful turkeys will give the place a wide berth.

This is but one of many examples of the turkey's caution. Woodsmen say that when the hen turkey leaves her nest, she almost always flies so that no tracks will betray the site to a fox or wildcat. When the big birds are feeding or taking dust baths, they take turns standing guard so that no enemy can catch them unawares.

Due to these exceptional precautions, when the wild turkey meets with an accident it is usually not his fault. This is more than you can say for man.

Because man has no natural enemy of much consequence save himself, the instincts which make wild things cautious have become dulled in him. Striking proof of this can be found in the number of accidents men suffer through carelessness in working with their own machines.

Last year alone, industrial accidents in this country caused 19,200 deaths, permanently disabled over 100,000 workers, and resulted in the loss of 42,000,000 man-days.

This toll would be serious at any time. Now, when industrial accidents slow up vital war production, it is a definite drag on the war effort.

For this reason, more and more manufacturers and contractors are calling on the services of men who can stop accidents before they happen.

These men are Travelers Safety Engineers. Years of experience have taught them just what kinds of working practices are apt to lead to accidents and what measures should be taken to prevent them from occurring.

This knowledge has enabled these specialists in safety to reduce industrial accidents very substantially.

Inasmuch as the accidents which cut plant production, and increase insurance rates needlessly, form a definite pattern, a Travelers Safety Engineer can nearly always help reduce them. Any Travelers agent or insurance broker can put you in touch with him.

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Why the Dodo Bird is extinct

WHEN THE PORTUGUESE landed on the island of Mauritius in the Indian Ocean during the 16th century, they found a strange, ungainly creature with disagreeable colorings. Although incapable of flight, it was a bird; and although somewhat larger than a turkey, it was related to the pigeon family.

This discovery was confirmed by later explorers, one of whom, an Emanuel Altham, wrote this note accompanying a specimen he sent back to Europe in 1628: "You shall receive—a strange fowle: which I had at the Iland Mauritius called by ye Portingalls a Do Do."

And, in 1638, Sir. T. Herbert wrote, "Here and no where else, that ever I could see or heare of, is generated the Dodo, a Portuguize name it is, and has reference to her simpleness."

But the Dodo is no more. He exists only in a phrase, and there as the ultimate in oblivion: "as extinct as the Dodo." It seems that around 1644 colonizers brought dogs and swine to the island. These thrived and multiplied and soon exterminated the Dodo. This may not have been due so much to the fighting ability of the animals as to the docility of the Dodo and the fact that it laid its solitary egg in a clump of grass on the ground where it could easily be trampled or devoured. The poor Dodo could neither fight, flee, nor lay its eggs out of reach. The last report of a live Dodo followed shortly.

Man, too, has been unable to adapt himself to the new hazards such as the automobile and other mechanical devices. When he comes in contact with either, it is a losing battle; he gets injured, sometimes fatally.

But luckily for man, along with these mechanical inventions came another, the invention of insurance. So that today, man need not suffer the financial losses always attendant upon accident, fire, and the other unpredictable mishaps which occur all too frequently. There are so many forms of insurance protection, each designed for some specific purpose, that they can be applied only by a specialist in insurance, such as the trained representatives of The Travelers.

The person who has not in some manner been benefited directly or indirectly by the institution of insurance is as scarce as the Dodo itself.

MORAL: Insure in The Travelers. All forms of insurance, The Travelers Insurance Company, The Travelers Indemnity Company, The Travelers Fire Insurance Company, Hartford, Connecticut.

Nature's Air Raid Wardens

THE WHISTLER, or hoary marmot (*Marmota caligata*) lives in the western mountains from central Idaho to the Yukon River.

One of his principal enemies is the golden eagle. These big birds are a constant danger every time the whistler goes into the open to feed.

To guard against these feathered marauders, the whistler has apparently devised an air raid protection system something like man's.

He frequently digs shallow shelter-holes along the pathways from his burrow to the feeding grounds which come in handy when an eagle is sighted.

In addition, the whistler generally lives in colonies. When one sights an eagle, like an air raid spotter he immediately gives a shrill piercing whistle. It is his version of an air raid siren and warns his fellows to take shelter.

Due to these precautions, the whistler is often able to reach home safely without becoming the main course of an eagle's dinner. And in his home the whistler is probably safer than you are in yours.

He can't fall downstairs, he has no bathtub to slip in, there are no skidding scatter rugs in his hall. The whistler is unable to scald himself with hot water, or trip over toys on the floor. He doesn't have these worries. But you do!

Accident insurance was invented to help take these worries off your shoulders. It can't prevent an accident, but it can keep an accident from costing you a lot of money and worry.

If you slip on a rug and break your leg, accident insurance will pay your doctor and hospital bills. It will care for your family while you are laid up and unable to earn a dollar. It will cover expenses that can easily run into thousands of dollars from a single accident.

Your Travelers agent will be glad to show you how Accident insurance can be an essential and inexpensive part of your entire insurance program.

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No coal, no oil, but they keep warm

ALTHOUGH the common honeybee (Apis mellifera) is not physically equipped to withstand cold weather, she is often found in climates where winters are severe.

And, unlike some insects whose life span is no longer than a season, a honeybee may live through the winter and into the following spring.

This is possible only because of the ingenious co-operative system by which she manages to keep warm, even at low temperatures.

The bees ball together in the hive, those in the center generating heat by moving constantly in a sort of dance. At intervals, they change places. Those that have been outside, exposed to the cold, go to the center.

By pooling resources in this way, honeybees are able to protect themselves from serious danger which they could not meet singly.

Of course instinct causes a honeybee to use this effective group protection. She is merely following out the plan which nature has prescribed for her and over which she has no control.

Now if you'll stop to think it over, man, even more than the honeybee, is threatened by dangers which he may find it difficult or impossible to meet alone.

A fire or windstorm may damage his property, an accident cause injury to him or his family. Expenses which follow can be extremely heavy. If he had to meet them alone, it might mean financial ruin.

Nature has prescribed no solution to these problems for man. But man, using his intellect, has arrived at one. He has worked out a means of combining his resources to protect himself from these hazards. He does it through insurance.

With proper insurance protection, you will not need to worry about how you can meet any unusual expenses which may result from an accident.

Are you certain that you have such protection, adequate for all emergencies? Your local Travelers man will be glad to check this for you.

MORAL: Insure in The Travelers. All forms of insurance and surety bonds. The Travelers Insurance Company, The Travelers Indemnity Company, The Travelers Fire Insurance Company, Hartford, Connecticut.

"Flying Tiger" in Quaker gray

THE KINGBIRD (Tyrannus tyrannus) isn't as large as a robin, and there's nothing regal about his appearance. His breast is white and his back is Quaker gray.

It isn't until the approach of a hawk, a crow, or some other enemy of bird life that you see why the kingbird is called king. The minute he sights such a foe, the kingbird attacks with a ferocity that even eagles have been known to flee.

He swoops on his larger, clumsier foes like a small, feathered pursuit plane, and continues the attack until the intruder flies away.

By nipping trouble in the bud this way, the kingbird keeps many accidents from happening to his furred and feathered neighbors.

This method of preventing accidents may seem like exceptionally hard work for the kingbird, but it's actually easy compared to the task that business faces in preventing industrial accidents.

The causes of industrial accidents aren't obvious things that anybody can spot immediately. It takes a trained man to find and correct them.

Such a man is the Travelers Safety Engineer.

This man must be trained by years of experience to reduce accidents by seeking out their causes and correcting careless working habits long before an accident ever occurs. He knows what to look for and, accidents are avoided by following his advice.

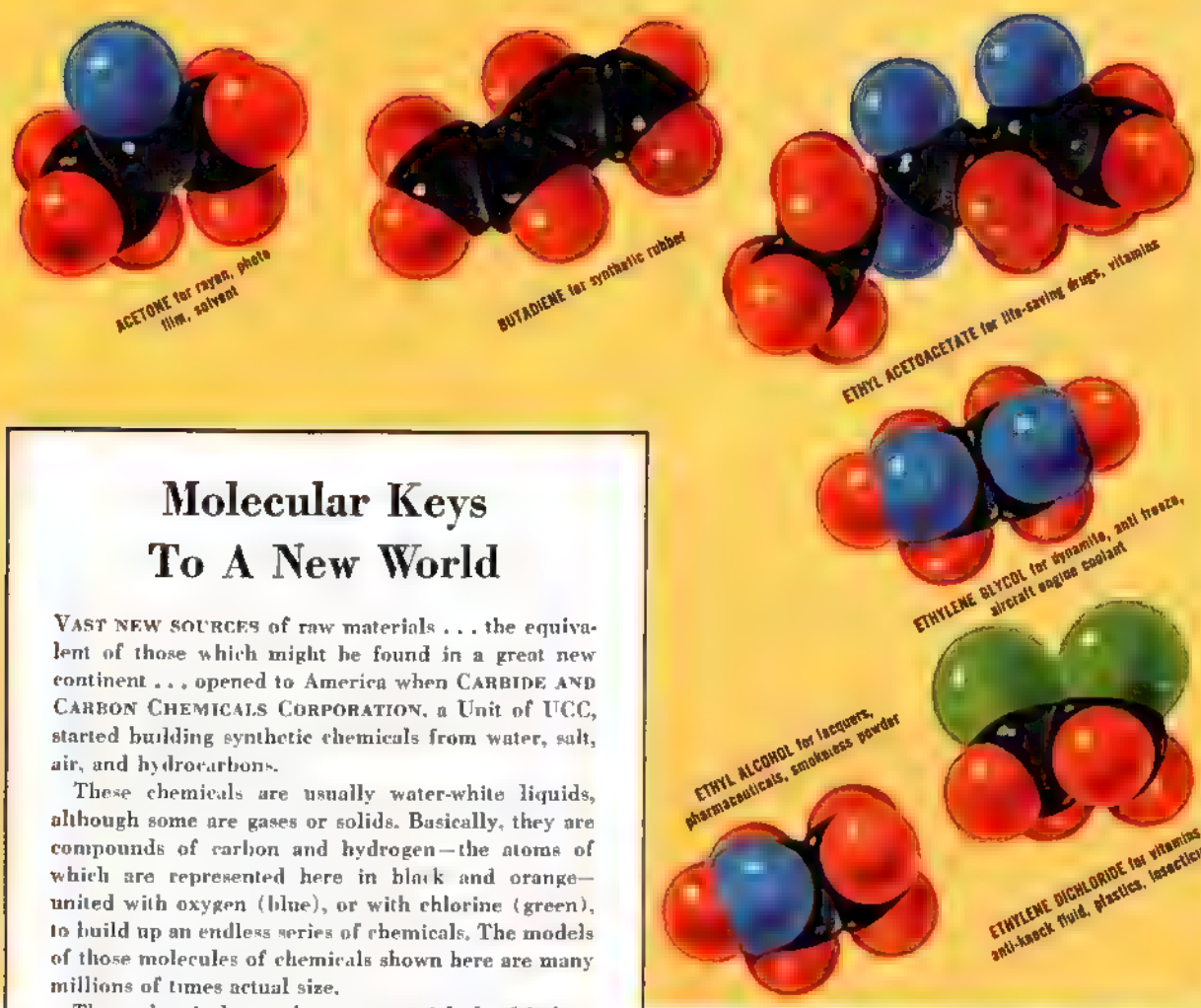
For example, in one day, a Travelers Engineer, inspecting a big construction job in the South, discovered 28 separate careless practices that could have caused accidents. They ranged from leaving exposed nails in boards to smoking in a dynamite house.

Today, when skilled hands are scarce and every man laid up by an avoidable accident tends to slow down our war effort, the Safety Engineer's services are more valuable than ever before.

If high accident rates are slowing down production at your plant, the chances are that a Traveler's Safety Engineer can help you. He's trained to get results.

You can arrange for his services through a Travelers insurance agent or your own broker.

MORAL: Insure in The Travelers. All forms of insurance and fidelity and surety bonds. The Travelers Insurance Company, The Travelers Indemnity Company, The Travelers Fire Insurance Company, Hartford, Connecticut.


ACETONE for rayon, photo film, solvent
BUTADIENE for synthetic rubber
ETHYL ACETOACETATE for life-saving drugs, vitamins
ETHYLENE GLYCOL for dynamite, anti freeze, aircraft engine coolant
ETHYL ALCOHOL for lacquers, pharmaceuticals, smokeless powder
ETHYLENE DICHLORIDE for vitamins, anti-knock fluid, plastics, insecticides

Molecular Keys To A New World

VAST NEW SOURCES of raw materials . . . the equivalent of those which might be found in a great new continent . . . opened to America when CARBIDE AND CARBON CHEMICALS CORPORATION, a Unit of UCC, started building synthetic chemicals from water, salt, air, and hydrocarbons.

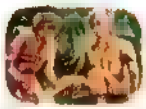
These chemicals are usually water-white liquids, although some are gases or solids. Basically, they are compounds of carbon and hydrogen—the atoms of which are represented here in black and orange—united with oxygen (blue), or with chlorine (green), to build up an endless series of chemicals. The models of those molecules of chemicals shown here are many millions of times actual size.

These chemicals are the raw materials for fabulous plastics . . . amazing textile fibers . . . life-saving drugs . . . vitamins by the carload . . . synthetic rubber . . . more things and better things than were possible before their existence.

Since these chemical wonders are obtained from abundant domestic sources, their use has contributed materially to the nation's self-sufficiency. Through research, American ingenuity, and patient development, scarce natural products have been duplicated or improved upon. Great new industries and great new materials that contribute to the nation's strength have come into being. And America has become a leader in a field as native as its own soil.

Broadly speaking, the uses of many of the synthetic organic chemicals developed by CARBIDE AND CARBON CHEMICALS CORPORATION are just beginning. The already established uses are indicative of their vast future values to mankind.

BUY UNITED STATES WAR BONDS AND STAMPS



BETTER MEDICINES! Amazing medicines like the sulfa drugs, synthetic vitamins, insect repellents, and anti-malarial drugs depend upon synthetic organic chemistry.

COLD PROOF! Coolant for liquid-cooled aircraft engines and base for anti-freeze in military cars and trucks is ethylene glycol, an important synthetic chemical.

MAGIC PLASTICS! Wonderful plastics that look like glass, stretch like rubber, and which are proof against water, sunlight, oils, and many chemicals are made from VINYLITE synthetic resins.

MAN-MADE! All types of synthetic rubber require synthetic organic chemicals for their manufacture. Here's hope for tires for you in the future.

UNION CARBIDE AND CARBON CORPORATION

30 East 42nd Street UCC New York, N. Y.

Principal Products and Units in the United States

ALLOYS AND METALS
Electro Metallurgical Company
Haynes Stellite Company
United States Vanadium Corporation

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Carbide and Carbon Chemicals Corporation

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National Carbon Company, Inc.

INDUSTRIAL GASES AND CARBIDE
The Linde Air Products Company
The Oxweld Railroad Service Company
The Prest-O-Lite Company, Inc.

PLASTICS
Bakelite Corporation
Plastics Division of Carbide and Carbon Chemicals Corporation

What's he got that you didn't have?

AMONG MANY THINGS already certain are endless human comforts made possible by plastics . . . shoes without leather . . . hats without felt . . . new kinds of suit and dress materials, as well as an almost endless number of home conveniences, that "neither moth nor rust doth corrupt."

You, perhaps, think of plastics as substances which can be molded into articles such as the toy in the child's hand . . . or into a telephone hand set . . . or colorful kitchen ware. But imagine beyond that. Imagine man-made materials which can be made as strong, pound for pound, as metal . . . or which can be spun as fine as the most delicate fibers. Imagine substances which can be made as clear as crystal . . . or as colorful as the rainbow . . . as elastic and flexible as rubber . . . or as rigid as stone.

Imagine materials which can be made acid-resistant or weather-resistant . . . shrink-proof, warp-proof, insect- or mold-proof. Imagine materials which are new substances in themselves, and which also transform familiar substances like wood, cloth, paper, leather, and even glass into new and more useful materials. Then you will begin to see what plastics can mean in the way of better houses, better cars, better clothes, better food containers . . . for your child . . . and for you.

The research which has characterized both BAKELITE CORPORATION and CARBIDE AND CARBON CHEMICALS CORPORATION, Units of U CC, has enabled them to show the way in the development and application of plastics and resins.

Resins and plastics, developed during the years before the war, are proving of extreme importance in essential activities of today. BAKELITE and VINYLITE resins and plastics help to insure the unfailing performance of battleships, aircraft, and tanks. They also extend the service life of military clothing and equipment, and hospital and surgical supplies. They are serving on all fronts.

These resins and plastics, and the new uses for them which are being developed today, will be important in the peace to come. They are among the things which will make a better world for you.

BUY UNITED STATES WAR BONDS AND STAMPS

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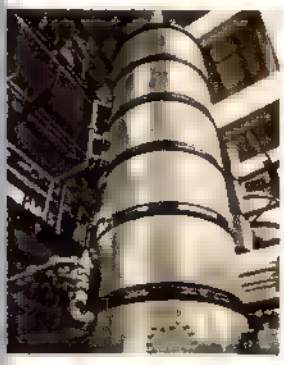
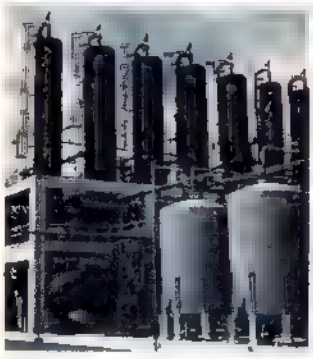
TEN YEARS' WORK IN TWO

is the story behind Butadiene and Styrene for Synthetic Rubber



Distillation Column for Styrene



Where Distillation Columns separate and purify the Butadiene

Butadiene Storage Spheres

YOU SEE HERE a night scene and some daytime views of the immense butadiene and styrene plants that CARBIDE AND CARBON CHEMICALS CORPORATION, a Unit of UCC, has designed and built at Institute, West Virginia, for the Government's Defense Plant Corporation and is operating for the Rubber Reserve Company.

Carbide and Carbon also has completed another butadiene plant at Louisville, Kentucky and has released plans to Koppers United Company for a third butadiene plant near Pittsburgh, Pennsylvania.

Butadiene had never been manufactured in the United States in large quantities before the plants at Institute went into production. The task involved in providing the mass production facilities the Government asked for was an unusual one . . . but one that took full advantage of the experience and processes developed by Carbide and Carbon.

Generally, it requires seven to ten years for a company to take a process developed in the laboratory, put that process to test in a pilot plant, iron out production problems, design a full-size plant, and then actually build the plant and go into mass production.

By working at top speed for twenty months—Carbide and Carbon telescoped research, development, engineering, and construction work that would have taken 10 years in normal times. In this short time laboratory research was translated through chemical engineering into larger and more modern facilities for producing the chemicals for synthetic rubber than existed anywhere else in the world.

This achievement could never have been possible had it not been for the years of research and experimentation which, prior to the emergency, Carbide and Carbon had devoted to the production of synthetic—or man-made—chemicals of the organic series.

Business men, technicians, teachers, and others are invited to send for the book "Butadiene and Styrene for Buna S Synthetic Rubber from Grain Alcohol" which explains what these plants do, and what their place is in the Government's rubber program.

BUY UNITED STATES WAR BONDS AND STAMPS

CONSTRUCTION RECORD AT INSTITUTE

June 25, 1941 — Carbide and Carbon submits definite production estimates.

July 31, 1941 — Design work starts on 10,000-ton-a-year butadiene unit.

Aug. 22, 1941 — Government authorizes construction.

Dec. 7, 1941 — Pearl Harbor

Dec. 15, 1941 — Design "frozen" for 20,000-ton-a-year alcohol-to-butadiene plant.

March, 1942 — Japanese occupy Malay Peninsula and Dutch East Indies; cut off about 90 per cent of U. S. natural rubber supply

April, 1942 — Construction on the first two 20,000-ton-a-year butadiene units starts at Institute, W. Va.

July, 1942 — Construction of 25,000-ton-a-year styrene plant starts.

Sept. 10, 1942 — Rubber Survey (Baruch) Committee report accepted.

Jan. 29, 1943 — First large-scale, alcohol-to-butadiene unit goes into operation two months ahead of schedule.

Feb. 18, 1943 — First tank car of butadiene from grain alcohol shipped from Institute plant.

April 7, 1943 — First styrene unit begins operation.

May 25, 1943 — Fourth 20,000-ton-a-year butadiene unit begins operation at Institute plant.

UNION CARBIDE AND CARBON CORPORATION

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ON THE JOB FOR UNCLE SAM

This husky fellow was designed to furnish the motive power for one of the Union Pacific fleet of Limited trains providing comfortable passenger transportation between Chicago and the West Coast. Today, he and many like him are performing an important war-time task. Uncle Sam has called on the railroads, not only to move vast quantities of war materials, but also to transport thousands of men in service. Thus, we are not always able to provide preferred accommodations for civilians who find it necessary to travel. To these patrons, Union Pacific wishes to express its appreciation for their patience and cooperation.

The Progressive

UNION PACIFIC RAILROAD

ROAD OF THE STREAMLINERS AND THE CHALLENGERS

A LITTLE EXTRA SERVICE

Day after day, uniformed men pour into the Union Station at Omaha, Nebraska. They come from New York, Chicago, San Francisco . . . from Albert Lea, Minnesota . . . Brady, Montana . . . and other points from coast to coast.

To them, Omaha is a city of strangers; just a "stop over" on their way to a destination. So, to help them feel at home, the Railroads serving the Omaha Union Station have provided air-conditioned quarters for a recreation room, shower baths, canteen, and first-aid station in charge of Registered Nurses. Local concerns and townspeople have contributed complete equipment and supply refreshments daily. Volunteer workers give generously of their time. Day and night, a neon sign displays this greeting—"Service Men's Center —Everything Free."

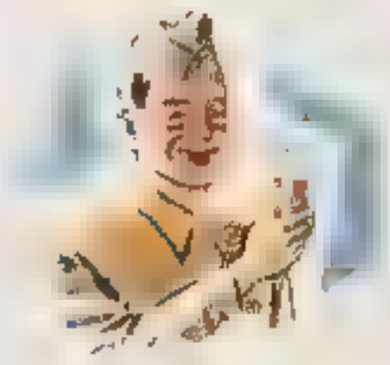
This is a small thing as compared, for example, to the vital job the railroads are doing in transporting huge quantities of war materials and trainloads of troops. But it is one way in which we on the home front can give a *little extra service* to our men who are fighting for their Country.

The Progressive

UNION PACIFIC RAILROAD

ROAD OF THE STREAMLINERS AND THE CHALLENGERS

BUY MORE WAR BONDS



"TO THEIR HEALTH"

Oranges and other citrus fruits are in greater demand today than ever before. As an abundant source of Vitamin C, they are invaluable in maintaining the health of America's fighters in the field and on the industrial home-front.

Union Pacific serves a large part of the Western territory which produces great quantities of citrus fruits. Modern refrigerator cars provide the protective transportation that keeps these fruits in orchard-fresh condition.

Thus, a transportation service of commercial value in peace-time has become even more essential in war-time. To guard America's health through supplying proper foods might be considered almost as important as the transportation of armament and troops; another job that the railroads are doing efficiently and whole-heartedly.

The Progressive

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The Progressive

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CLEAR TRACK AHEAD

From the cab of his locomotive, the engineer looks ahead at the long stretch of steel rail illuminated by the headlight's brilliant beam. Perhaps it hasn't occurred to you, but that beam symbolizes, in a sense, the light of Freedom pointing the way to a better future . . . a "clear track ahead."

That's what you want—a better world in which to live. Not so much for yourself but for all those young Americans who must face the future whatever it may be. And the fulfillment of that desire depends *first* on our victory.

One Union Pacific engineer cannot win this war but he—his brother engineers—and many thousands of other railroad employes, men and women, are bringing victory nearer by exerting every effort to make certain that troops and war materials are efficiently and safely transported.

The Progressive

UNION PACIFIC RAILROAD

ROAD OF THE STREAMLINERS AND THE CHALLENGERS

Hitler came the closest . . . *by using the air*

Recurring attempts to conquer the world bloody the pages of history. Let us tabloid the tale: When the ancient *flat* world bordered the middle ocean, the Mediterranean, conspicuous contenders were the Carthaginians and Romans. With the discovery that the earth is *round*, attempts at world-conquest grew in intensity on a widening scale: Philip II, Louis XIV, Napoleon, William of Hohenzollern! Until World War I, battles were confined to the earth's *surface*. Then came the dress rehearsal, in Spain, for World War II, with aviation the dominant factor. "It was the handwriting, not on the wall of Belshazzar's Palace, but upon the universal sky for all mankind to read." This, the first global-war, is the birth pain of the human race entering its greatest era, the Air Age. To hasten victory, our entire aviation industry continues to perform miracles of war-plane production. But the ocean-of-air will remain after this war, *and we must remain dominant in it.* To that end too Vultee labors, because the Air Age has just begun.

VITAL TO VICTORY

VULTEE AIRCRAFT, INC., VULTEE FIELD, CALIFORNIA

Builders of Trainers, Dive Bombers and Fighters

Member, Aircraft War Production Council, Inc.

Westinghouse creates light by the mile . . .

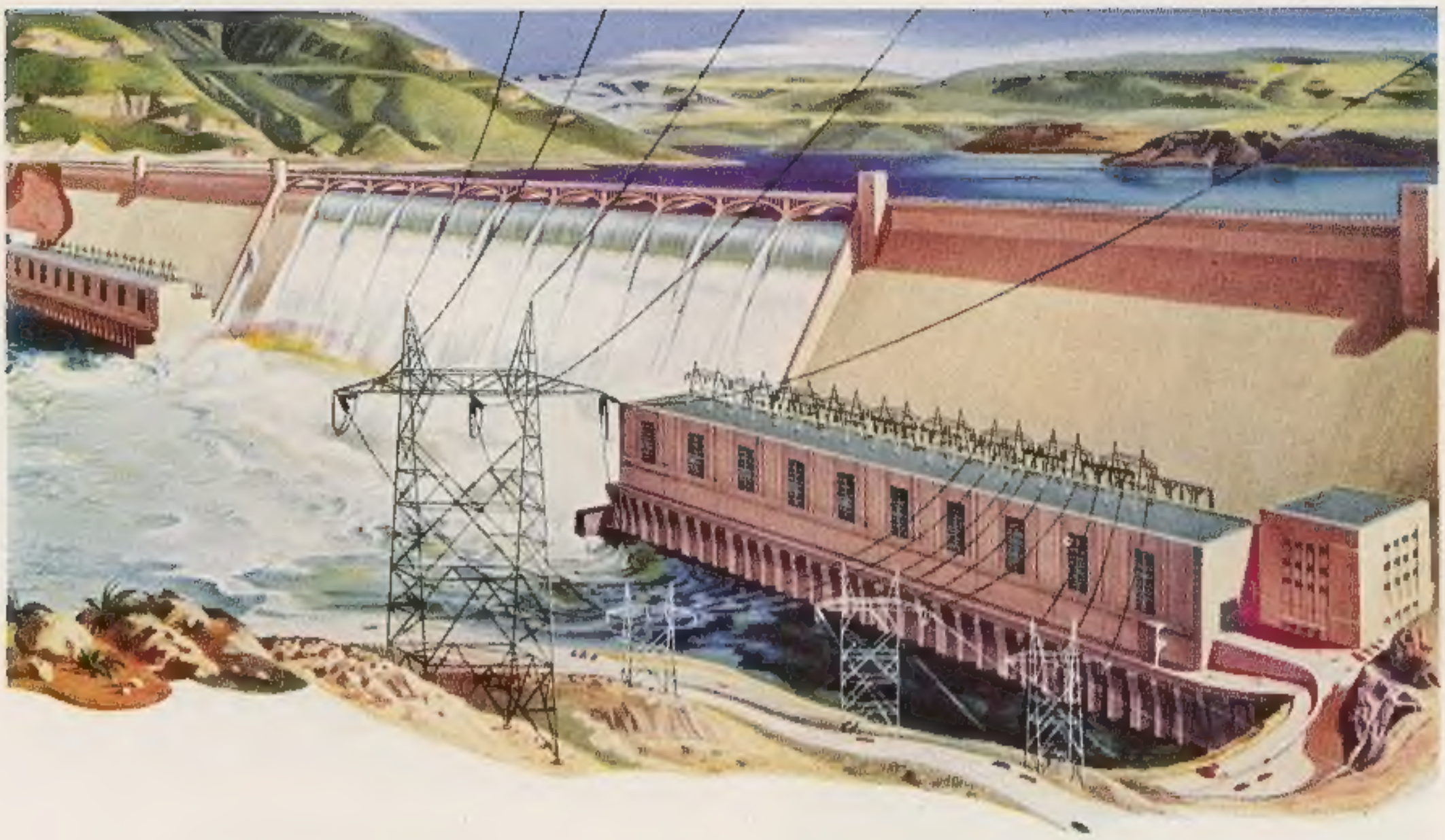
Light for the airport . . . light for the long factory aisle . . . light on the hands of a woman, knitting in the evening. Out of steam or waterpower, Westinghouse equipment generates electricity to make this light.

Westinghouse skill is in these lightning fingers . . .

setting the filament in place . . . creating the lamp . . . creating light. In the fingers of such Westinghouse people as Nancy Morris, in their skill, lies the secret of a thing that is intangible yet real—Westinghouse quality.

Westinghouse kindles a light in a boy's eye

to this boy, and all his generation, we have made a promise: That good things, and useful things—electrical and electronic appliances and products—will come out of the experience gained in this time of war and destruction. Perhaps this boy will take part in their creation . . . will join us in our common desire—to *do* things better, to *make* things better, for a better and finer world. Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa. Plants in 25 cities . . . offices everywhere.

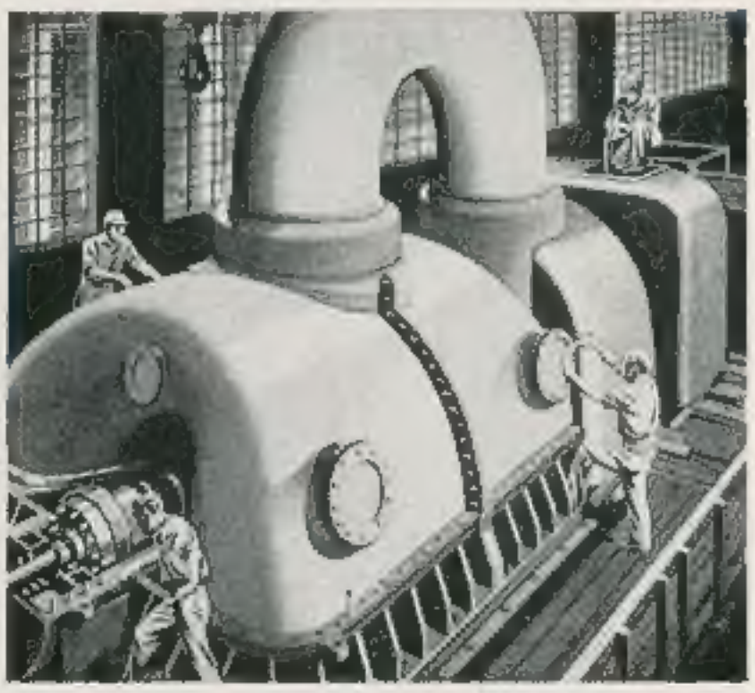


Westinghouse generators make power for a nation at war...

From the world's largest water-wheel generators at Grand Coulee Dam—from Westinghouse steam-driven generators in power plants throughout the nation—flow billions of kilowatts of electric power to turn the wheels of America's war industry.

Westinghouse combines the power of a thousand human skills . . .

A workman at a lathe, a girl on an assembly line, an engineer on the test floor—theirs, and the countless other skills of 103,000 Westinghouse employes, are welded into a single great production force. Their vast experience and knowledge help to produce the vitally needed power-generating equipment to drive America's mighty war machine.



Westinghouse contributes the power of immense new knowledge . . .

When the incredible weapons born of wartime research are reforged for peacetime service, the daily miracles that electricity will perform are certain to create new and finer standards of living . . . while the cost of electricity continues to decrease as our nation's power-generating capacity continues to increase. Westinghouse Electric & Manufacturing Company, Pittsburgh, Pennsylvania. Plants in 25 cities—offices everywhere.

"Mission accomplished!"

A United States Marine dodges swiftly across the battle-scarred slope, takes position behind a shattered wall that commands the enemy gun emplacement across the tiny valley.

A shell explodes in a shower of dirt, two hundred yards away from the enemy gun.

The Marine speaks quietly into the tiny microphone in his hand. "AK9 to BJ. Left four zero. Two hundred short." Miles away, an American artillery officer issues swift commands to his gun crew.

Another shell-burst, this time in front of the target. "AK9 to BJ," says the leatherneck. "Left one zero. One hundred short."

And then, suddenly, a terrific, ground-shaking explosion across the valley . . . the enemy gun emplacement disappears in a black, billowing geyser of rocks and smoke and rubble. The Marine puts the microphone to his lips.

"AK9 to BJ—Mission accomplished! AK9 to BJ—Mission accomplished!"

Mission accomplished—a direct hit! *Because the miracle of electricity has been put to work again*—in the rugged, compact radio transmitter and receiver that rides comfortably across the devil dog's back. "Walkie-talkie," the Marines call it—a light, completely self-contained unit that allows constant two-way communication with unhampered freedom of movement. On scores of vital assignments, the "walkie-talkie" is helping to make American Marines the deadly fighting team that they are.

The "walkie-talkie" is only one of many Westinghouse electrical products for America's ground forces. In tanks and combat cars —at artillery and anti-aircraft posts and communications centers—in the field and behind the lines, more than a hundred kinds of Westinghouse electrical equipment are in use.

For our ground forces, as well as for our naval and air forces, every ounce of Westinghouse "know-how" is on the job—*to provide more and more of the deadliest fighting weapons that skill and ingenuity and hard work can produce.*

Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa. Plants in 25 cities; offices everywhere.

Westinghouse

. . . making Electricity work for Victory

This is the way to win a battle in the desert

Libya and North Africa made it clearer than ever: THIS IS A WAR OF SUPPLY.

In 1918, an American soldier could be equipped and maintained on 5 tons of supplies each year.

But today, for every soldier sent abroad, *10½ tons* of shipping space must be provided for *equipment alone*. And it takes an additional *18 tons of shipping to supply a single soldier for a year!*

Supply is a matter of *ships*.

And ships need electricity.

Vast quantities of electric power, for a thousand vital tasks that must be done to take a convoy safely across the seas . . .

Electricity to steer the vessels and operate the radios and signal lights.

Electricity to detect the approach of enemy subs and planes, to sound the alarm, to organize the defense.

Electricity to power great cargo winches, and delicate navigating instruments.

Electricity to make magnetic mines harmless, to provide invisible "black light" for reading charts at night. Electricity to keep food fresh, to cook it, to ventilate the ships, to provide comfort for the crews.

Electricity in every freighter, every tanker, every Navy escort vessel—to help win the war of supply!

We of Westinghouse take tremendous pride in building so much of the electrical equipment, so many of the great turbines and gears and electric drives, for the ships of America's Navy and Merchant Marine.

Into every piece of that equipment go all our "know-how," all our skill, all our determination to *do our share* in this war—and if possible, a little more.

Westinghouse Electric & Manufacturing Company, Pittsburgh, Pennsylvania.

Westinghouse

PLANTS IN 25 CITIES—OFFICES EVERYWHERE

Tune in the Westinghouse Program starring John Charles Thomas —NBC Network, Sunday, 2:30 P. M., Eastern War Time.